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No. 515 - Fall 1992
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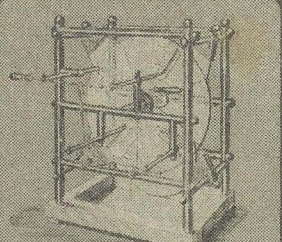
LOUD TALKERS

HOW TO BUILD THEM

by H. WINFIELD SECOR, E.E.

Pressures frequencies

by L. Transtrom



STAT ELECTRIC

by J. H. Pepp

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GERNSBACK'S EDUCATIONAL LIBRARY, No. 2

HOW TO MAKE THE MOST POPULAR ALL WAVE 1 and 2 TUBE RECEIVERS

10

ARCS & SPARKS!

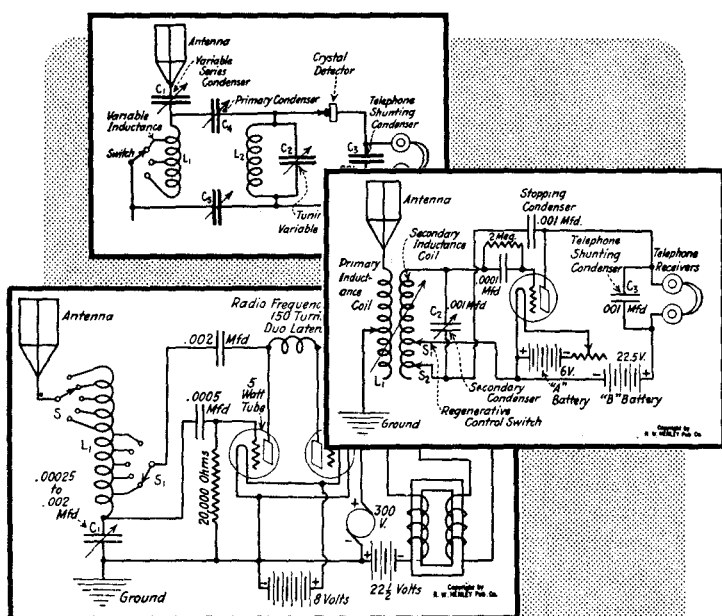
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A.C. BATTERY UPSPEAKER SETS

NEW YORK, N.Y.

LINDSAY PUBLICATIONS INC

PO Box 538, Bradley IL 60915 • 815/935-5353



100 Radio Hook-Ups
by Maurice L. Muhleman
reprinted by
Lindsay Publications

With this inexpensive and immensely popular 1920's booklet you can go back and discover both short- and long-wave radio all over again. You get 100 different circuit diagrams using triode vacuum tubes, honeycomb coils, variometers, A.F. transformers, B batteries and all the rest.

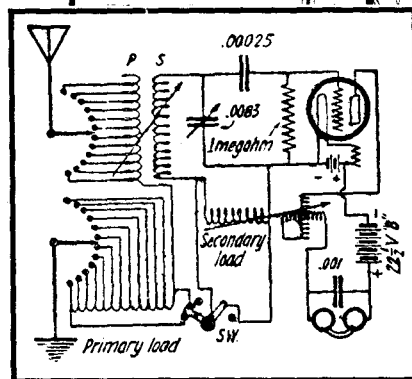
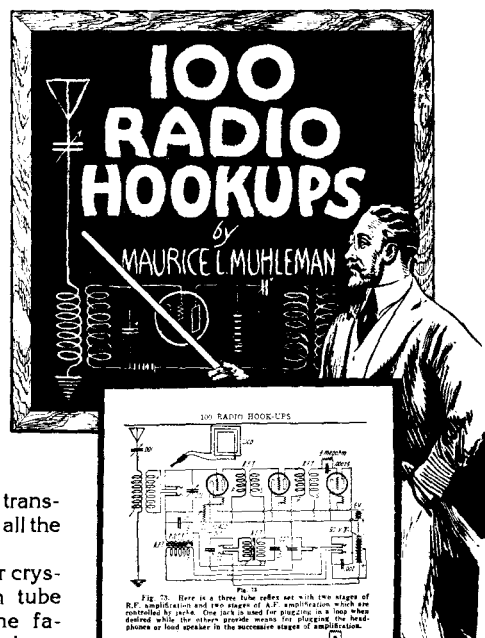
You get hook-ups for crystal sets, plain vacuum tube sets, regeneratives, the famous Reinartz, improved Reinartz and other combination sets, RF amplifier sets, Neutrodyne, reflex circuits, super-regenerative, superheterodyne, and several miscellaneous sets.

What I don't like about the book is that the original was poorly printed on really cheap paper. We managed to "clean" up the original so that it would reproduce reasonably well. It's not as sharp and clear as I would like, but I doubt that I will ever see another copy.

You don't get detailed coil data, specifications, or how-to. This was an idea book for people who had already built a radio and wanted to try something else. Maybe you can use these circuits with modern field-effect transistors and parts salvaged from transistor radios to build modern versions. If you're good at scrounging antique parts, you might want to build a replica.

I like it. Small, inexpensive and worth having! It's from the golden age of radio. Order a copy! 5x7 paperback 48 pages
Cat. no. 20641

\$3.95



222 Radio Circuit Designs

Incredible collection of radio plans from 1924!

HENLEY'S 222 RADIO CIRCUIT DESIGNS

by Anderson, Mills, & Lewis

Wow! If you're into building old time radio circuits or just like to relive the old days, you **MUST** have this incredible book of schematics from 1924! This is "a comprehensive and up-to-date collection of modern receiving and transmitting circuits with complete design data".

You get loads of circuits on all kinds of equipment. For instance, chapter six presents 25 different schematics for the basic crystal set using every conceivable type of loading and tuning arrangement.

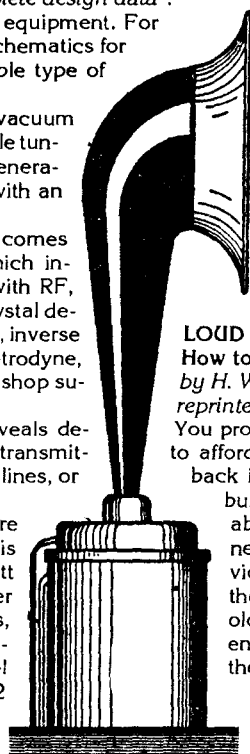
Chapter seven launches the reader into vacuum tube detectors some with even more incredible tuning arrangements. You'll find a variety of regenerative receivers, and even a crystal receiver with an RF amplifier!

After chapter eight on audio amplifiers comes chapter nine on miscellaneous circuits which include ultra-audio receiver, Reinartz tuner with RF, detection and audio, one-tube reflex with crystal detector, three-tube reflex with RF transformers, inverse reflex, CW receiver with BFO, three-tube neutrodyne, counter EMF circuits, Cockaday receiver, Bishop super-regenerative receiver, many others.

The final section of circuit diagrams reveals designs for spark, CW, modulated CW and AM transmitters. Transmit from your car, through power lines, or from aerials!

Relive the days of radio when circuits were simple and components hot and heavy. This book is for you. You won't find any 1/4 watt resistors, DIP IC's, or LED's. You have better start looking for iron core audio transformers, carbon microphones, and 4V203's! Absolutely great book! Great fun! A must have! Order a copy. You'll like it. 5 1/2 x 8 1/2 paperback 271 pages
Cat. no. 20323

\$11.95



LOUD TALKERS

How to Build Them

by H. Winfield Secor

reprinted by Lindsay Publications

You probably wouldn't have been able to afford a loud talker (loud speaker) back in '23. You would have had to build one. Actually this is a book about winding the electromagnetic that vibrates a diaphragm violently enough to hear it across the room when amplified with an old-fashioned horn. Sections are entitled loud-talker field frame, the diaphragm and moving coil, data on loud-talkers actually built, details of step-down transformer, connection to

vacuum-tube amplifier set, power amplifier circuit, bi-polar loud talker made from odd parts, building the electromagnet, and more. Unfortunately, there is nothing of significance on the horn. It's just a little booklet. The original is brittle and yellow, having been printed on the cheapest paper. It's interesting. Rarely will you find anything on speakers. Worth adding to your radio collection. Order a copy! 5x7 booklet 48 pages
Cat. no. 20803

\$3.50

How to Build LOUD TALKERS

VACUUM TUBES in Wireless Communication

Vacuum Tubes
in Wireless Communication
by Elmer E Bucher

In 1919 radio had proven itself in the just-ended First World War. Radio's future looked bright.

The author explained his purpose in writing this book:

"In preparing the text of this book, the author had two principal

objects in view: (1) to provide the Government and commercial wireless operator with a brief and simple explanation of the functioning of the circuits of the vacuum tube, (2) to lay before the experimenter and the practical operator the numerous circuits employed from time to time in the laboratory and in commercial practice.

Outside of its obvious commercial value, the perfected vacuum tube affords the experimenter a most fascinating field of research. This is well evidenced by the fact that a single bulb with associated tuning apparatus connected to a four wire aerial 200 feet in length permits wireless signals to be received over distances 2,500 to 4,000 miles in daylight, and up to 6,000 miles in darkness."

On the title page is an other description that says it all.

"This volume shows over 140 different circuits for the practical use of Vacuum Tubes as Detectors, Radio or Audio Frequency Amplifiers, Regenerative Receivers, Beat Receivers, and Generators of Radio Frequency Currents.

The Two, Three and Four Element Oscillation Valves are described in detail together with the circuits used in daily practice. Cascade Amplifiers of the latest type for long distance reception are comprehensively

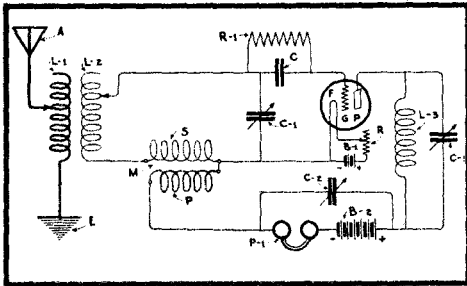
treated. Up-to-date circuits for long distance receptions are comprehensively treated..."

This almost all circuit diagrams, many being brand new to me. How about regenerative cascade systems, a modified Weagant Beat receiver, Espenschied's Duplex Wireless Telephone system, or circuits using

unusual tubes such as the Dynatron, the Pliodynatron, the Kenotron, or the Plotron? Back then, this book described the cutting of technology as radio began to move away from spark gap code transmission to continuous wave methods using tubes.

This is a great collection of very unusual radio history, something you don't find any day. 'Course it's a lot of

bone- heads who would be just as happy if they NEVER found it any day. But don't you be one of them. Consider this carefully. Its unusual. 5 1/2 x 8 1/2 paperback 208 pages Cat. no. 20412 \$12.95



How to Build Your Radio Receiver

Popular Radio Handbook No. 1
How to Build Your Radio Receiver
edited by Banning & Cockaday
reprinted by Lindsay Publications



Today we talk about high tech inventions like space shuttles, computerized virtual reality, and gene-splicing. In 1924 the craze was radio.

And it was fed by the amazing discovery that short waves could carry messages around the world.

The best thing about radio back then was that just about anybody who could save enough money to buy a vacuum tube could build their own receiver and get in on the fun. (I don't know of anybody who has their own space shuttle...)

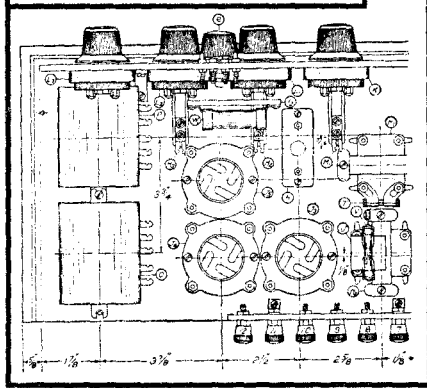
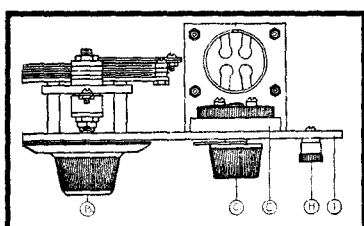
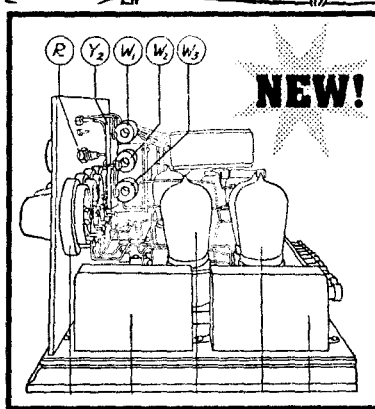
The people at Popular Radio published their magazine to cater to the exploding interest. What you get here are the

best construction articles from that magazine.

Chapters include: how to read a radio diagram, how to put up an outdoor receiving antenna, how to build an efficient crystal receiver, how to build the Haynes DX receiver, how to build a two-stage audio-frequency amplifier, how to build the four-circuit tuner, how to build a tuned radio-frequency receiver, how to build the improved four-circuit tuner, how to improve the three-tube four-circuit tuner, how to build the new regenerative super-heterodyne receiver, and broadcasting stations in the U.S. of 50-watt power or more.

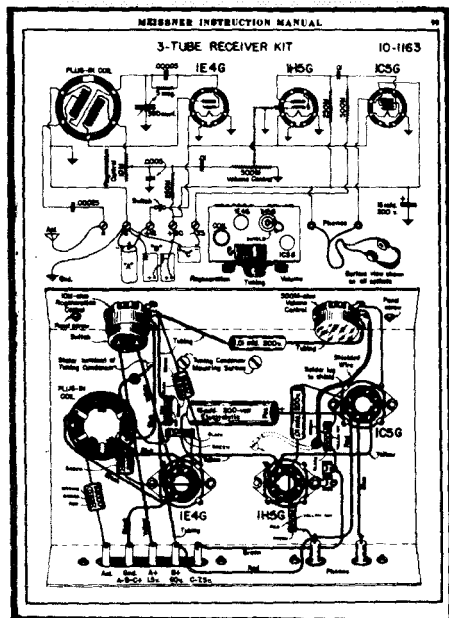
This is old time stuff with four-prong tubes, coupling controlled by moving the coils, bread-board layouts, and 45 volt "B" batteries. You get drilling layouts for the Bakelite panels, dimensions for the cabinets, wiring instructions and more. This is one of the best early practical how-to books I've seen

If you have radios to restore, or have old parts you'd love to lash up into a working set, then this is for you. For the rest of us it's fun reading. It's technological history! Early radio at its best. Get a copy. 8 1/2 x 11 paperback 104 pages Cat. no. 20951 \$8.95



MEISSNER MANUAL!

Famous Kits from 1943!



Meissner "How to Build" Instruction Manual (1943)

by Meissner Manufacturing Company
reprinted by Lindsay Publications

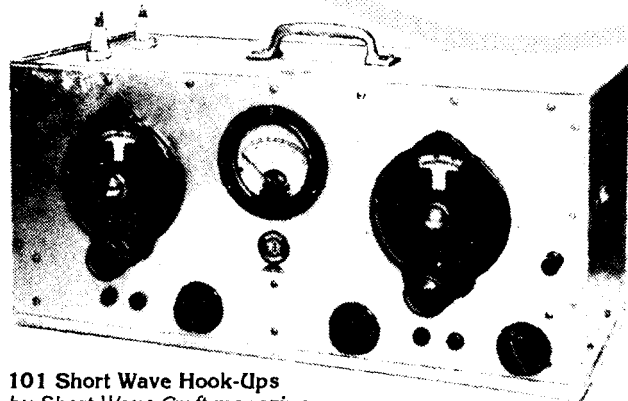
Here you get a compilation of the instructions needed to build electronic kits sold by the Meissner Company, being "Fully illustrated with charts, radio formulae, schematic circuit diagrams, and pictorial wiring diagrams."

You get general chapters on radio coils, antennas, and FM. Then you discover chapters on a FM-AM receiver, FM adapter, 5-band hi-fi superhet, the Custom All-Wave "9" (4-band hi-fi superhet), 8-Tube "Combination" Receiver, 7-tube AC "Utility" Broadcast set, 7-Tube Broadcast Police and Shortwave Receiver, 5-Tube AC TRF set, Two-Tube AC-DC Midget receiver, a three-tube version, another two-tube version, a Portable Phono Recorder, Hi-Fi Public Address Tuner, Wireless Phonograph Oscillator, Signal Calibrator, the famous Deluxe "Signal Shifter," the "Signal Spotter," the "Traffic Master"—a 14-tube 5-band Communications Receiver, the "Traffic Scout"—a 9-tube 5-band Communications receiver, and more. I count 36 different sets.

You get fairly good step-by-step how-to, the schematic, a pictorial wiring diagram showing the actual components and how they were laid out, adjustment and operating instructions.

This is octal tube equipment that still turns up at hamfests and flea markets. Great info for restoration and building from scratch. Fun! Get a copy! 8 1/2 x 11 paperback 168 pages
Cat. no. 20633 \$9.95

101 ShortWave Hookups



101 Short Wave Hook-Ups
by Short Wave Craft magazine

I never get tired looking at old radio diagrams. I'm amazed at how simple equipment could perform so well! I guess that's why I like this circa 1935 circuit book.

"This book has been prepared in response to many requests for a compilation of short-wave circuit diagrams which have appeared in Short Wave Craft magazine during the past few years. Where ever possible, complete parts lists have been given with the diagrams and, in some cases photographs of the equipment are also included...."

This is one big, fun picture book of radio circuits. It's broken into six broad sections entitled Straight S-W Receivers, S-W Superhetrodynes, Super-Regenerative Receivers, AC-DC Receivers, Miscellaneous, and Transmitters. (Unless I counted wrong, I counted 91 different circuits.)

Wall-to-wall fun. You'll like it. Order a copy. 7 1/4 x 9 1/2 paperback 72 pages
Cat. no. 20382

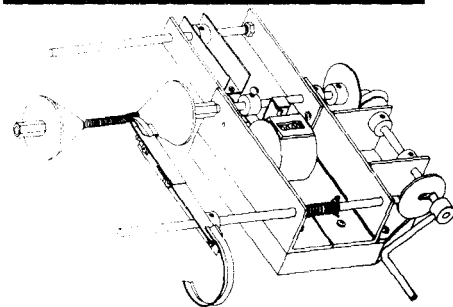
\$7.95

Some of the
circuits you'll
find:

The Mono Coil 2
Ham-Band Pee-Wee 3 Tuber
The Pal 2-Tube Portable
The Electrodyne 1-Tube Set
A Dual Regeneration Control
Set

An Advanced 5-Tube Receiver
Master Composite 4
Short-Wave Thrills on 2 Tubes
A 4-Tube Superhet
The Globe Girdler
Mitchell 7-Tube Superhet
Ultra Seven Portable All Wave
SuperHet
Short-Wave Megadyne
An Improved Super Regenera-
tor

The 53 1-Tube Twinplex
Building a 2-Tube Oscillodyne
A Balanced-Detector Super-
Regenerator
A 5-Tube AC Oscillodyne Set
A 5-Meter Super-Regenerator
A German SW Set
A Symmetrical Input Super-
Regenerator
A 2-Volt 3-Tube Ham Set
5-Meter Transmitter and Re-
ceiver
and much more....



Build a Universal Coil Winding Machine
by David J. Gingery

Just a few years ago, experimenters could buy two or three simple hand-operated affordable coil winders. I haven't seen any of them advertised lately. You certainly can wind coils by hand, but if you're going to do any serious experimenting with old-time shortwave circuits, a coil winder is worth having.

Dave will show you how to build a coil winder from common, easily-obtained ma-

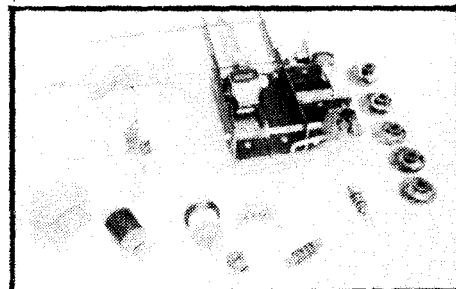
BUILD A COIL WINDING MACHINE

Make Professional
Quality Coils Easily!

terials. Although it may look complex, it really is not. You'll find that it is easy to build. You don't need to be a mechanical genius, or need expensive tools. Yet this amazing little machine will professionally wind universal and honey-comb coils, single layer and multi-layer solenoids, close-wound and space wound coils, and even pi-spaced coils such as used for RF chokes and transform-
ers.

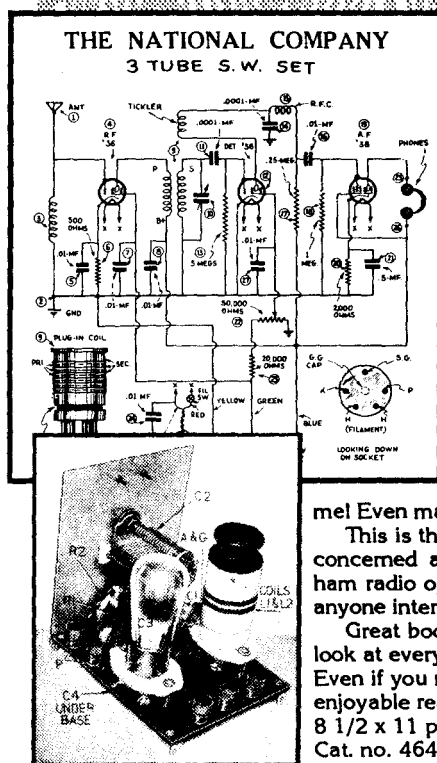
This is a typical Gingery how-to book—loaded with illustrations, dimensions, and step-by-step text that is so detailed it almost holds your hand! Excellent publication. A serious experimenter should have a copy of this and the winder it describes. Order a copy. It's excellent. 8 1/2 x 11 booklet 24 pages
Cat. no. 386

\$8.95



Official 1934 SHORTWAVE RADIO MANUAL

Incredible How-To,
Reference, and a
special new chapter on
solid-state sets!



me! Even master machinist, Dave Gingery has built these sets. This is the nuts for the experimenter, the survivalist who is concerned about basic communication, shortwave listeners, ham radio operators who collect old receivers, and just about anyone interested in old-time radio.

Great book. Best old-time radio book I've ever seen. And I look at every one I can get my hands on. Consider it carefully. Even if you never build one of these radios, you'll get hours of enjoyable reading out of this book. Top rate. Order a copy.

8 1/2 x 11 paperback 260 pages

Cat. no. 4643

\$14.95

Official 1934
SHORT WAVE RADIO MANUAL
edited by Hugo Gernsback & H W Secor
new chapter by T. J. Lindsay

Build simple, high-performance old timeA shortwaver radios! You can. All of the secrets are here: the circuit diagrams, parts layout, coil specifications, construction details, operation hints, and much more.

Back in the 20's and 30's the only low-cost way of listening in on the newly discovered and fascinating shortwave radio frequencies was to build a set. Short-wave construction magazines flourished, even during the depression.

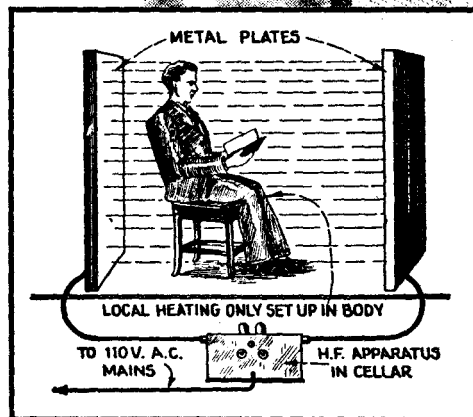
This is a compilation of construction articles from "Short Wave Craft" magazine. It's wall-to-wall how-to.

At the rear of the book are circuit diagrams, photographs, and design secrets of all shortwave receivers being manufactured in 1934 including some of the most famous: SW-58, the SW-5 "Thrill Box", the deForest KR-1, the Hammurand "Comet Pro", and many more.

You'll find that all the circuits use tubes since transistors hadn't yet been invented. And you'll also find that the original tubes listed are usually difficult to find today. Included is a new chapter showing how you can use transistors to replace hard-to-find vacuum tubes. You'll even see the circuit that was lashed together on a table top one night using junk box parts, one of my wife's hair curlers and alligator

clips. When I hooked it up to an antenna strung across the basement ceiling and attached a 9 volt battery, signals started popping in like crazy. In a couple of minutes I heard an urgent message from a ship's captain off Seattle asking for a navigator to help him through sl...ow water. Not bad, considering I live near Chikve!

These small, regenerative receivers are extremely simple, but do they ever perform! I've built dozens of them, and they never fail to amaze



Underground Frequency Guide
by Harry Helms

"A guide to spies, smugglers, guerrilla forces, and other unusual signals on shortwave radio."

"The shortwave bands are filled with mystery and intrigue. Female voices can be heard reading number groups in Spanish, English, and German. Stations using call signs not issued by any nation exchange cryptic messages in Morse code. Other stations do nothing more than continuously repeat a single letter from the Morse code. Strange sounds, such as 'beeps,' 'rasps,' and 'foghorns,' are also heard. No nation or group claims responsibility for these signals. There's more..."

This is not a big book. But you're not paying for ink and paper. It's the information on each page that counts. You get over 500 active frequencies based

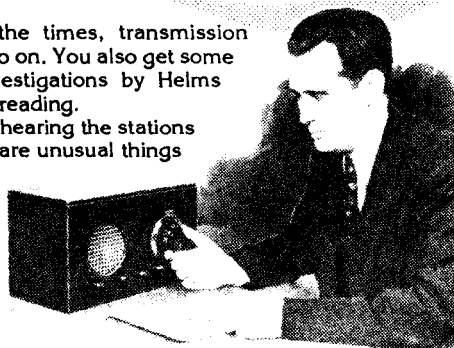
on actual receptions, the times, transmission modes, languages and so on. You also get some interesting personal investigations by Helms that are definitely worth reading.

This is a way to start hearing the stations that others don't. There are unusual things happening out there.

Find them. Let this book help you. Something the serious SW listener should have. 8 1/2 x 11 paperback 86 pages

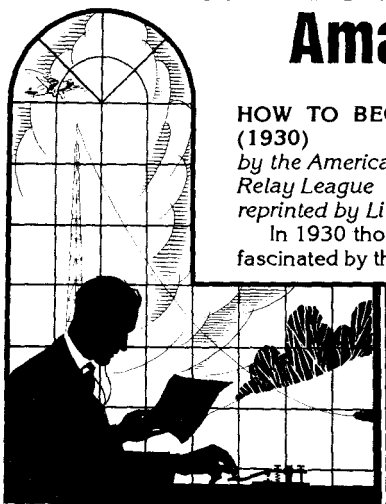
Cat. no. 388

\$10.95



LINDSAY PUBLICATIONS INC, PO Box 538, Bradley IL 60915 • 815/935-5353

How to Become a Radio Amateur - 1930



HOW TO BECOME A RADIO AMATEUR (1930)

by the American Radio Relay League

reprinted by Lindsay Publications

In 1930 thousands of people were not only fascinated by the arrival of broadcast radio, but by the magic long distance communication possible through shortwaves. This simple booklet was intended to draft many of those people into the hobby of ham radio.

Here you'll discover the amateur bands as they then existed, how to learn Morse code, how to build a two-tube (UV-201-A) bread board re-

EDDY'S RADIO OPERATOR

by Lt Myron F. Eddy

reprinted by

Lindsay Publications Inc

Through the years the ARRL has continuously published excellent books on becoming a radio amateur. Here's "How to Become an Amateur Radio Operator and Secure a U.S. Government License including How to Learn the Code, General Radio Theory, Questions and Answers Covering the License Examination" published in 1934 by Short Wave Craft magazine.

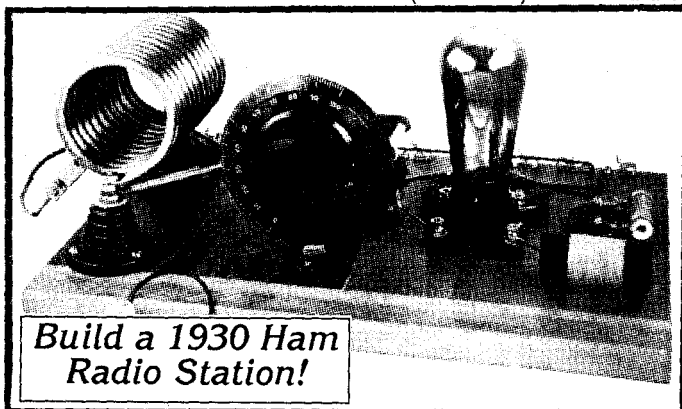
Some of this is history – just fun to read. Some is radio theory but with vacuum tubes not transistors. Some is construction of radio receivers such as the 3 tube bandspreeder, the superheterodyne, and others. You'll even get a look into the secrets of the Hammarlund "Comet Pro".

You'll learn about code and phone transmitters including construction of a breadboard push-pull code transmitter and an early crystal controlled phone transmitter with amplifier stage. The power supply, modulators and other pieces fit into an impressive homemade wooden rack mount transmitter guaranteed to impress (or scare) your 1934 neighbors!

In the back are a few ads including one for the famous National SW-3 regenerative receiver, the Kolster Model K-5 amplifier, and National's BM3" midjet Velvet-Vernier dial.

This is fun reading and great info on early receivers and transmitters. It gives a view of amateur radio as seen from outside the ARRL. You might not want to put the transmitters on the air, but the receivers would be fun to build, and learning the code is still very valuable. Fun reading. Worthwhile addition to your collection. Order a copy! 7 1/2 x 9 1/2 paperback 72 pages Cat. no. 20730

\$5.95



Build a 1930 Ham Radio Station!

generative receiver for the 80 meter band, an oscillating transmitter using a UX-210 tube, an AC power supply, tips on setting up the radio station, and finally how to operate it.

Not only is this great nostalgia, it is also quite practical should you want to build a copy of the regenerative receiver. You may want to build a copy of the transmitter for display or occasional demonstration, but you probably wouldn't want to use it on the air.

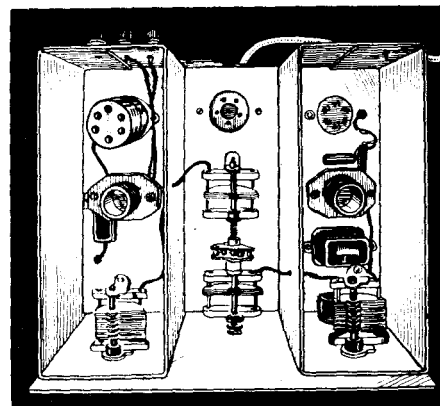
Discover 1930 ham radio. Build early equipment. Lots of fun reading.

Low cost. Get a copy.

8 1/2 x 11 booklet — 32 pages

Cat. no. 20226

\$2.95



SHORTWAVE QUIZ BOOK & KINKS!

Short Wave Radio QUIZ BOOK AND KINKS

by Short Wave & Television Magazine

reprinted by Lindsay Publications

Short Wave & Television Magazine frequently published reader's questions and answers as well as small "fillers" of circuits, hints, tips and kinks. In 1938 a collection of these tiny articles was reissued in this 64 page book.

You'll get tips on winding coils, bending chassis, soldering phone tips, making a lightning arrestor from a spark plug, plans for a rf amplifier, a 2 tube SW set, another for a motorcycle, a 2 tube battery set, a 6.3 volt 3 tuber, and on and on. There are hundreds of hints and kinks here!

You'll wish the stories were longer, but there are so many great ideas (some a little ridiculous) that you won't complain. It's fun reading. I like it, and I think you will, too. Order a copy. 5 1/2 x 8 1/2 paperback 64 pages

Cat. no. 4945

\$4.95

Fantastic 1938 Collection of Hints & Tips

- SW Receivers for 110 VAC Operation
- AC-DC Receivers • Battery Type SW Receivers • Short-Wave Antennas
- Antenna Hints • Short-Wave Converters • Pre-Amplifiers • Miscellaneous SW Hints • Beat Oscillators • Power Supplies • Audio Amplifiers • A Folded Doublet to Save Space • How to Get Best DX • Simple 1-Tube Booster • A Twin Pentode Receiver for the Beginner
- Kinks for SW "Fan" • Easy-to-Build Short Wave Transmitters • Code Practice Oscillators • 5-Meter Receivers • "Ham" Kinks



1914 PARTS CATALOG!



1914 CATALOG ELECTRO IMPORTING CO

reprinted by Lindsay Publications

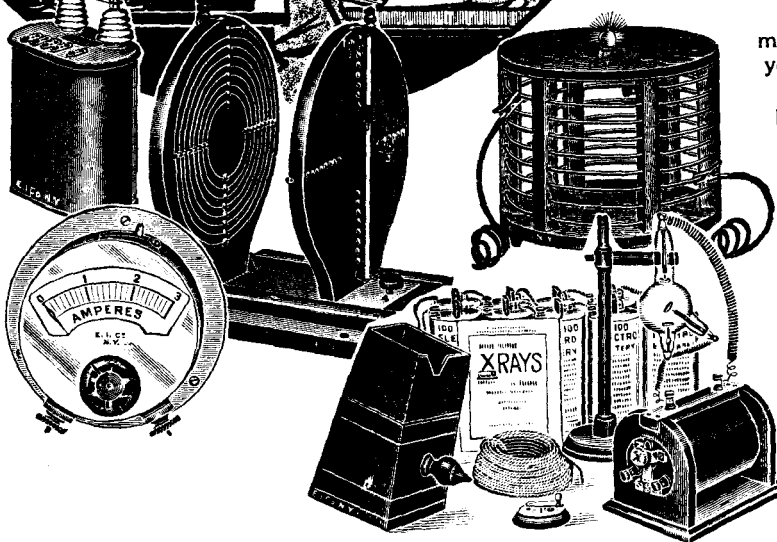
It's 1914! And you've decided to build a receiver to listen in the wireless traffic that is beginning to fill the airwaves. Or you've decided to build a powerful sparkgap transmitter. Or you can't wait to duplicate Tesla's experiments. But where do you get parts?

Here you'll find the most complete selection 1914 electrical components available anywhere! You'll find the peroxide of lead detector, the "Electro" Telegraph Key, the "Electro" Leyden Jar, and even the "Electro" 1/2 KW Transformer coil that would enable you to build a 100 mile wireless coil. You'll find illustrations, text, even practical how-to tips on everything imaginable: electrolytic interrupter, kick-back preventer, precision coherer, polarized relay, vario selective coupler, "Interstate" wireless receiving outfit, "Telimco" wireless telegraph outfit no. 4, the Omnigraph No. 2777, "Bull-Dog" spark coil, fancy Geissler tubes, the experimental X-Ray outfit, X-ray tubes, storage batteries, tungsten flashlights, household wiring sockets and switches, rheostat, 150 watt gasoline home lighting plant, hydro-electric plant, electric motors, electroplating outfit, Tesla transformer, electrical medicine machines, Wimshurst machine, hand tools, and much, much more.

(No, you can't order any of the equipment listed. If you try, you'll just make a fool of yourself.)

This is a small, well-illustrated, jam-packed catalog that features unusual equipment that is no longer manufactured and no longer used. This is fun reading and great reference for the collector, restorer, or builder of replicas. You'll find this quite enjoyable. I recommend it to any antique hardware freak, in other words,

YOU! Get a copy. 4 1/2 x 6 1/2 paperback 144 pages
Cat. no. 20587
\$7.95

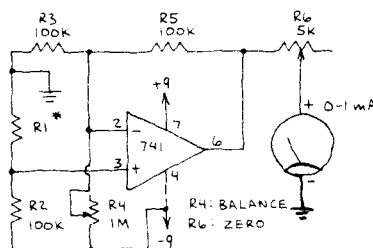


Engineer's Notebook by Forrest Mims

I like vacuum tubes and transistors, but integrated circuits are here to stay. Anyone who uses or intends to use integrated circuits needs this. In fact, over 750,000 copies of the previous editions of this reference have already been sold.

What you get are page after page of penciled circuit diagrams using common integrated components and resistors. You can find a simple circuit to build a regulated power supply delivering twelve volts, or a 6-volt charger for nicad batteries. You can find circuits for light meters, function generators, microphone preamplifiers, infrared transmitters, sirens, timers, pulse generators, frequency synthesizers,

BRIDGE AMPLIFIER



* R1 IS UNKNOWN RESISTOR USE Cds CELL FOR R1 TO MAKE A VERY SENSITIVE LIGHT METER.

DIFFERENCE AMPLIFIER

IC NOTEBOOK!

touch-tone decoders, musical instruments, in addition to many, many digital circuits.

Magazines often present fancy designs for special purposes. But what you get here are the day-to-day circuits that an experimenter needs to build equipment. Covered are MOS, CMOS, TTL and LS, and linear integrated circuits.

If you're wanting to experiment with low cost IC's and don't quite know where to start, here it is. I look at this almost as a book of projects and experiments, even though you don't get much more than the circuit diagram.

I like it. I think you will, too. Judging from the quantities sold in the past, other people must like it as well! Get a copy. 8 1/2 x 11 paperback 155 pages

Cat. no. 389

\$14.95

The Receiving Experimenter



CONDUCTED BY S. KRUSE, TECH. ED.

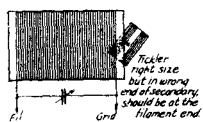
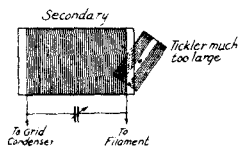
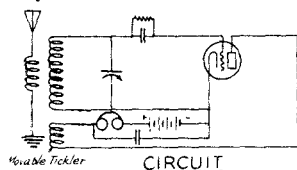
Regeneration Control

It is pretty generally admitted now that Ballantine was correct in stating that tickler regeneration is superior to the use of a variometer in the plate circuit. The reason for his claims are very beautifully set down in Section 73 of his book which all live members of A.R.R.L. have by now.

One of the main advantages of the tickler is that the regeneration can be changed without shifting the tune all over the lot.

The Size of the Tickler

Almost every set that we have ever met has more tickler than is really needed, probably because the maker of it was



BAD ARRANGEMENTS
Tickler has large tuning effect

ORDINARY TICKLER—SERIES FEED

FEED BACK CONTROLLED BY MOVING THE TICKLER

"scared to death" that he could not make it oscillate at all times. The results is that the tickler control is tricky, especially on the lower wavelengths. The cure is to reduce the number of tickler turns until the tickler has to be turned nearly to the end of its range to get oscillation at the upper wavelengths.

Tickler coils need not be wound with heavy wire unless the tuner is used for C.W. reception.

The tube on which a tickler is wound should always be small enough to miss the inside of the secondary tube by half an inch or better. This results in smoother control and in much less tuning effect on the secondary circuit.

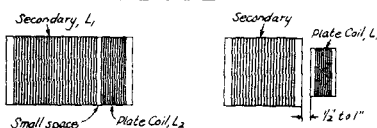
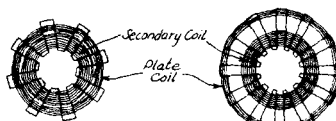
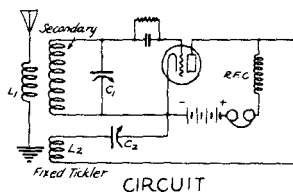
In the early 1920's ham radio operators and shortwave listeners were getting in on the incredible shortwave experiments underway by building their own regenerative receivers.

As you know, regenerative receivers are beautifully simple in design and yet can provide incredible performance. Like almost any equipment, the simpler the design is, the more care each component and sub-component must receive if the device is to achieve its potential. In a regenerative receiver the feedback tickler can be very touchy. If feedback is insufficient, the receiver just won't work. If feedback is excessive, you'll have a dickens of a time trying to balance it on the threshold

of oscillation. You may even throw the receiver into audio oscillation and deafen yourself with earphone howl!

In the July 1924 issue of QST published by the American Radio Relay League, the technical editor in his monthly column discussed tickler problems for his readers. You may find his comments reprinted here useful.

And by the way, QST and the ARRL are still very much alive and well. You can join and subscribe. In fact, you can become a ham without having to pass a code test! Anyone with even a smattering of radio knowledge can become a radio amateur. Become one and get in on the fun.



ORDINARY ARRANGEMENTS
Feed-back condenser has some tuning effect

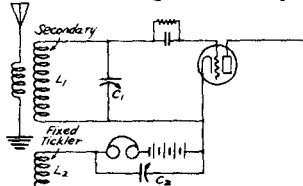
ARRANGEMENT in which feed-back condenser has little tuning effect

THE WEAGANT-REINARTZ ARRANGEMENT

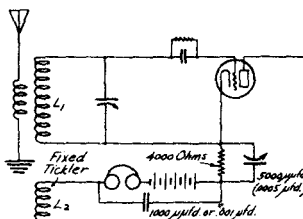
Fixed tickler—shunt feed. Feed-back controlled by variable feed-back condenser

Large or Small Tickler

It is evident enough that a big tickler moved to and from the secondary will change the tuning. It is possible to cut this effect down a great deal by using a



Normal Throttling Condenser System



Throttling Condenser System Suggested by IAEI
THROTTLING CONDENSER SYSTEMS

Fixed tickler, series feed. Feed-back controlled by variable feed-back condenser. Coil arrangements same as for Weagant-Reinartz.

tickler that is not nearly as big around as is the secondary coil. This was well explained in "Short Wave Tuner Design" on page 37 of our December issue. This idea is used in the Zenith receiver and also in Schnell's low loss tuner described in our February issue. A tickler about one-half as large in diameter as the secondary seems to be nearly right. It will probably take a few turns more than would a large tickler but will bother the tuning much less.

Fixed Ticklers

Another way of getting rid of the tuning effect of changing regeneration is by using a tickler that does not move and controlling the regeneration in some other fashion. The best known form of this arrangement is the Weagant-Reinartz combination in which shunt feed is used. This scheme gives much less detuning effect that does anything but a very small movable tickler. It can be still further improved if the tickler is placed half an inch or so away from the secondary as shown in the 1HX tuner in the February issue. With this tuner it was possible to move the regeneration condenser from maximum down to the point at which the tube stopped oscillating without losing the sharpest C.W. signal. Very few tuners will do this.

Still another arrangement is the use of a throttling condenser, two arrangements of which are shown.

How Many Turns?

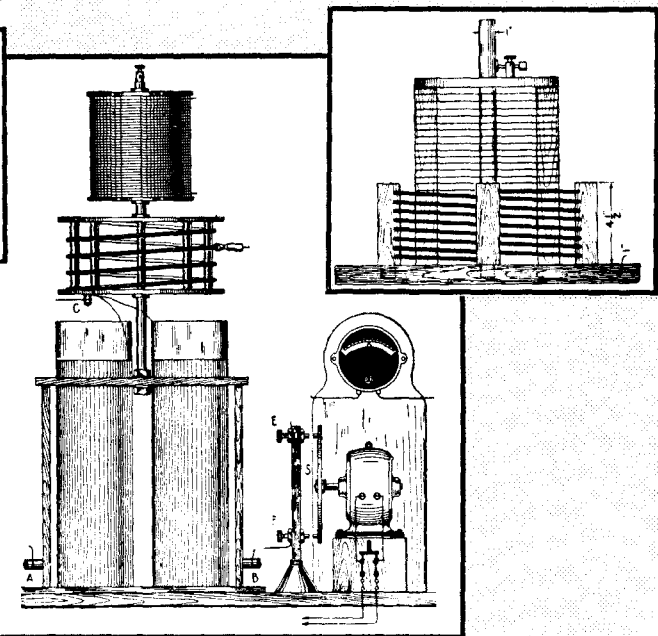
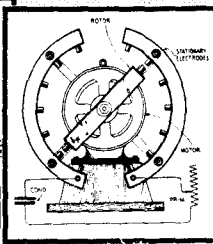
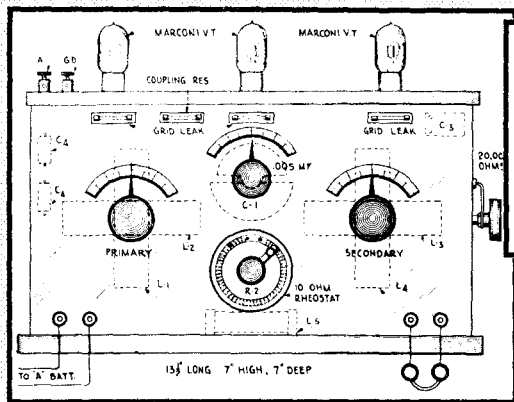
Mr. Hassel's very excellent article in the December number accomplished many things for amateur, and commercial, radio. Most important of these was his complete success in pointing out the generally low-grade standard of tuners then in use on amateur and broadcast waves.

Since that there has been a complete stampede toward better coils and better condensers.

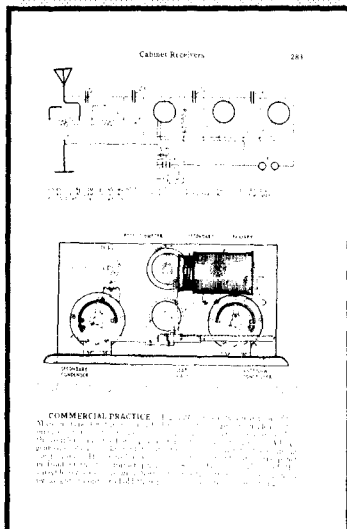
This has brought with it a lot of uncertainty as to the proper number of tickler turns, for a good secondary circuit.

As soon as one of these good secondary circuits is put into a tuner there follows a cat chorus—the old tickler is far too large. The remedy is to take off turns until the set can barely be made to oscillate at the top of its tuning range, when the tickler is turned clear over to the end of its travel. More turns than that will make the set howl at the shorter waves, especially when a moving tickler is being used.

We believe that almost without exception the regenerative tuners on the general market have twice the necessary number of tickler turns, making them cranky and unsteady on the lower waves. When it comes to amateur tuners we are sure that at least 90% of them have three times the necessary tickler turns.



Wireless Experimenter's Manual



WIRELESS EXPERIMENTER'S MANUAL
by Elmer E. Bucher
reprinted by Lindsay Publications

In 1920 amateur radio was hot! It was the cutting edge of technology! Everyone wanted in on it, and Bucher showed readers how to build equipment and operate it. You can relive those days!

You get chapters on advice to the amateur, formation of a radio club, principles of the radio transmitter, construction of transmitters, construction of aerials and masts, tuners and detectors, vacuum tube detector and amplifier, undamped wave receivers, undamped wave transmitters, cabinet receivers and accessories, design of wavemeters, closed coil

aerials, Weagant static eliminator, and long distance relays by radio.

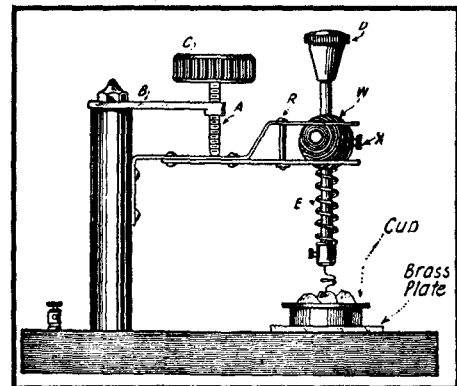
You get everything from early spark gap transmitters which were related to Tesla coils to continuous wave transmitters and radio telephone transmitters. You get great construction how-to on winding power transformers, coil winding machines, oscillation transformers, high-voltage condensers, rotary spark gaps, making a key, building receivers with variometers, and

homemade crystal detectors.

But this is also extremely "modern" (for 1920). You'll learn about vacuum tubes and their use as replacements for crystals and as amplifiers. You'll even get one of the very earliest circuits for Armstrong's original regenerative receivers. And on and on it goes.

Even if you never build a single thing from out of this book, the countless incredible drawings will take you back to the days when radio was new. You can almost participate in the excitement of new radio discoveries just as shortwaves were about to be explored for the first time.

Great book! Fun reading. Incredibly good if you want to build crystal sets, Tesla coils, transformers, repair old radios, or build reproductions of antique equipment. Fun reading for the old-time radio fan. Get a copy. I think you'll like it. I do. (Is it obvious? Or what?) 5 1/2 x 8 1/2 paperback 350 pages Cat. no. 20854 \$13.95

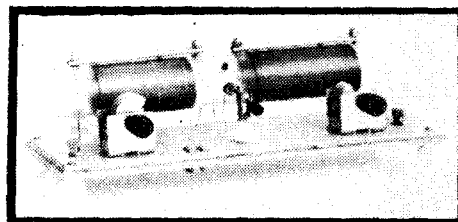


RADIOS THAT WORK FOR FREE

by K.E. Edwards

Build yourself a crystal set! You'll be shown eve-

Radios That Work For Free!



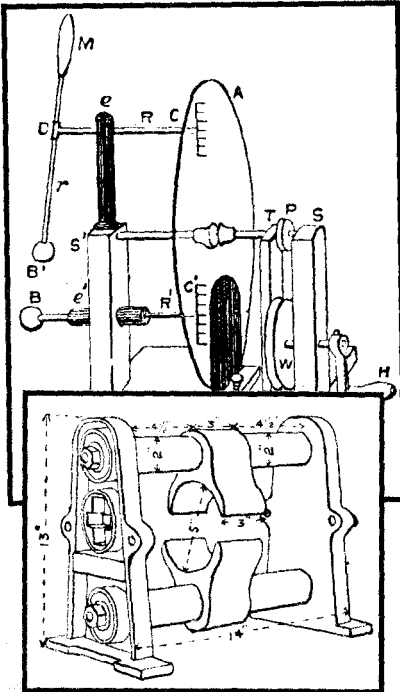
rything you need to know - from materials to tools to techniques. Edwards will show you how to build "hot-rod" crystal sets with fancy features that can outperform the old oatmeal box versions, but are still simple. If you've never built anything electronic at any time but would like to try, this is a great place to start. This book has become a classic in its field, and it gives me a good feeling. I think you'll like it, too. 5 1/2 x 8 1/2 paperback 138 pages — well illustrated Cat. No. 314 \$7.95

ELECTRICAL INSTRUMENT-MAKING for Amateurs

by S. R. Bottone

reprinted by Lindsay Publications Inc

You can go back a hundred years and build your own equipment and be right at the "cutting edge" of 1888 technology.



You get basic information on materials, soldering, and working glass. Then you build pith ball and gold leaf electrosopes, a Coulomb torsion balance, and Volta's electrophorus static generator. You'll learn how to take a sheet of glass and cut a circle from it, drill a hole in the center and use it to build Bertsch's high-voltage static generator, Carre's Dielectric machine, a Holtz machine, and a Wimshurst influence machine. Any one of these machines is powerful enough to shock the underwear off Aunt Annabelle!

You'll learn how to build a medical coil that produces a 1/2" spark, or a 1" spark induction coil. With a powerful magnet you can make a shocking machine which appears to be little more than a simple magnet. Build a uni-direction current machine (a motor), a dynamo, an ammeter, a voltmeter, a galvanometer, batteries, a single fluid cell, a double fluid cell, and using these two basic battery configurations how to create powerful batteries using chemicals from zinc chloride and sulphuric acid to sal ammoniac and potassium dichromate which are more commonly known as the Daniell, Bunsen, Smee, Walker cells and others. Then you get simple plans so that you can build a working electrical telephone, the newest rage a hundred years ago.

Obviously so many topics are covered in such a small book that the number pages devoted to each topic are necessarily limited. Nevertheless, you get enough useful information to build working equipment. The illustrations are primitive by today's standards but are informative.

Fascinating book! Valuable information! Get a copy. Worth having. 5x7 paperback 183 pages
Cat. no. 4929 \$9.95

RADIO TROUBLE- SHOOTING

1928 RADIO TROUBLE-SHOOTING

by Enno R. Haan

reprinted by Lindsay Publications

When you open the covers of Radio Trouble-Shooting, you'll discover beautiful illustrations, dozens of schematics, many charts and diagrams detailing radio technology not seen in decades.

Chapters include tools and instruments, uncontrollable troubles and interference, antenna-circuit troubles, batteries and chargers, battery eliminators and their troubles, tube troubles and their remedies, internal disorders in radio receivers, reproducer troubles and maintenance.

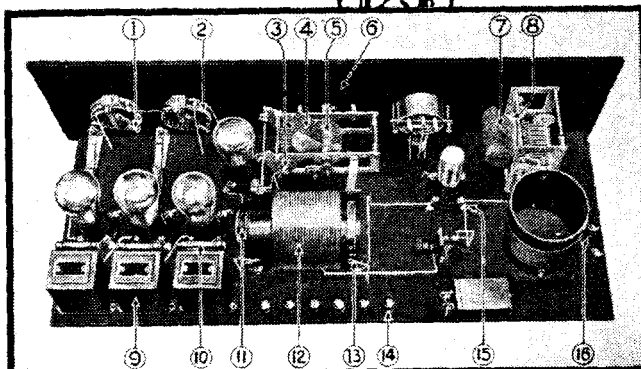
You'll find that numerous pages are devoted to batteries and eliminators, their care and repair. You'll learn how to erect large outdoor

antennas and connect smaller indoor loop antennas. Discover how to test tubes and reactivate them. And you'll even find an incredible characteristic chart of rarely seen battery and AC tubes such as the Daven MU-6, the Schicklering MU-20, the DeForest DV-7, the Western Electric 205D and many others.

To cure internal disorders you'll have to know how to troubleshoot the tuning circuit, analyze grid circuit and plate circuit troubles, control regenerative reradiation, how to neu-

tralize a neutrodyne, and even troubleshoot the state-of-the-art superheterodyne. You'll learn how to care for headphones, how to eliminate B+ voltages from talking horn speaker circuits and old-time earphones.

Fun reading! You get a snapshot of early radio technology at a time when shortwaves were making radio exciting for everyone. Get in on the fun. Order a copy. Excellent early radio book. 5 1/2 x 8 1/2 paperback 328 pages
Cat. no. 20102 \$14.95



Shortwave Listening Guidebook

by Harry Helms

Shortwave listening is great fun! If you haven't tried it, do so. Here's the book to get you going.

You'll learn about selecting the right shortwave receiver and how to operate it. You'll learn about reception conditions and how they vary, about getting program schedules from foreign broadcasters, about listening in on US

armed forces, Air Force One, and much more.



Chapters include understanding the shortwave bands, selecting a receiver, antennas and accessories, radio propagation

tion, major international shortwave broadcasters, domestic shortwave broadcasting, utility stations, illegal and mysterious radio stations, and more.

SW Listening

Listening to foreign broadcasts can be fun, but with TV now using satellites to get news from around the world, I don't find that too exciting anymore. It's the other signals that interest me - spy stations, fax transmissions, teletype and computer signals, morse transmissions to ships at sea, pirate radio stations and more. You have to know where to look and what to look for, but they're there.

And you can go after them. Even the simplest regenerative receivers described in other books in this catalog are more than enough receiver to get you started (and hooked!).

Eavesdrop! Snoop! Listen in! Go for it. A bit expensive, but good. Order a copy. 6x9 paperback 316 pages

Cat. no. 387 \$16.95

Please Use Your Customer Number!

Please use your customer number when ordering.

U2 1042

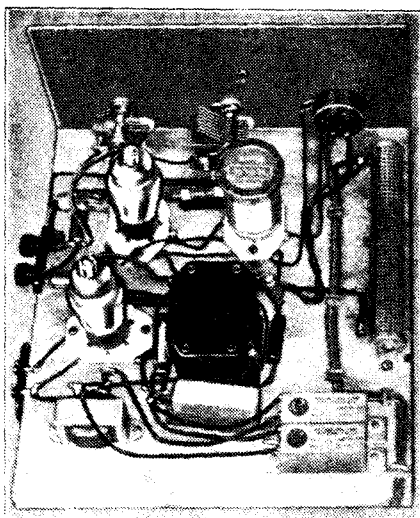
E. Lectro Cuted
1 Cold Turkey
Six Feet Under
IL
60000

It helps us get your order out quickly and accurately, and will help us ensure that you get future catalogs.

HAMMARLUND SHORT WAVE MANUAL Third Edition reprinted by Lindsay Publications Inc

For only ten cents you could by this 32 page booklet and choose which of the twelve different shortwave radios you wanted to build. These were the depression years, and Hammarlund, one of the most reputable manufacturer of radio parts, was eager to sell you what you needed to build a low-cost receiver.

You'll like this! The plans offer interesting detailed text that makes construction easy along with the basic schematic diagram, a parts connection diagram, tube pin layouts, coil charts and lots of photographs. I haven't seen any plans better done than these!



The "Pentaflex" uses a single 6A7 pentagrid converter tube as a regenerative detector and as an audio amplifier. This could be fun to build.

12 SW RECEIVERS from Hammarlund!

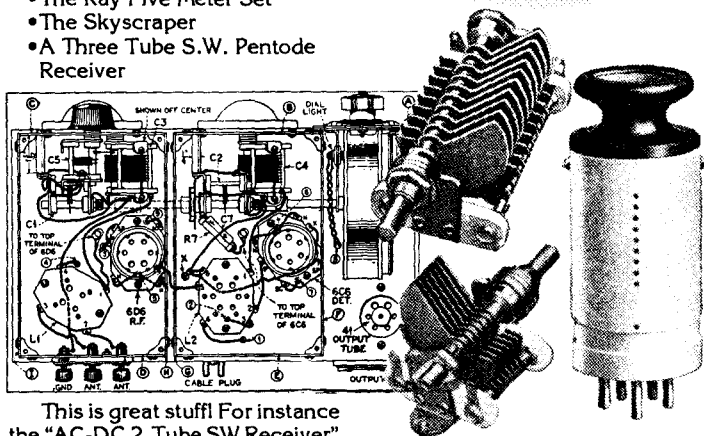
You get—

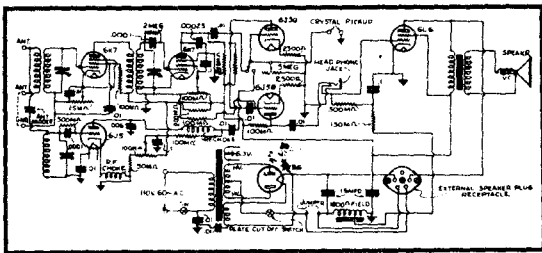
- A Boy Scout's S.W. Receiver
- ARRL Ham Receiver
- The Argonaut
- The AC-DC 2 Tube S.W. Receiver
- Doerle 2-Tube Receiver
- The Dragnet
- The Gainer
- The Pentaflex
- A Power Pack for S.W. Receivers

- Radio Amateur's Handbook 3-Tube Band Spread AC set
- The Ray Five Meter Set
- The Skyscraper
- A Three Tube S.W. Pentode Receiver

And the "Ray Five Meter Set" is a three tube super-regenerative set for the then-experimental band of 5 meters (about 60 mHz). Back then a five meter set was a marvell And there are nine other circuits plus a battery eliminator project.

Great 1937 Plan Book!





DOERLE CATALOG

DOERLE CATALOG

originally offered by Oscar Kusterman, NY
reprinted by Lindsay Publications

Here's a great little 1930's catalog issued by NY radio dealer, Oscar B. Kusterman. You get great illustrations and descriptive copy of receivers and ham radio transmitters, along with schematics and practical details.



Examine the Doerle Model D-7 with its 6K7 RF amp feeding a regenerative detector and powerful AF amplifier. A separate

6J5 acts as a superregenerative detector for 2 1/2, 5, and 10 meters. You get the complete wiring diagram.

The sw regenerative receiver used a pair of 37's to cover the bands from 600 to 12 meters. A complete kit sold for only \$2.50 less tubes! The 3-tube AC-DC receiver covered 600 to 12 meters using the

three 76's and running off batteries or 110 VAC. Study the five tube BS-5 Five Band Bandswitch Receiver, the Doerle Model D-5 cover 1000 to 9 meters, the Doerle "19" single tube receiver kit, the Doerle AC 4, and more.

You could have purchased the HF-19 5-meter transceiver kit, the TR45-meter transceptor, a two stage audio amplifier, or a 10 watt modulator. The HF-35 tri-tet transmitter could put out 35 watts on the 160 through 20 meter amateur bands using metal receiving tubes.

You get a whole page of circuits "for the fan who builds his own receiver hookups." At the back of the catalog is an order blank, but don't try to use it. I've already notified the New York City postoffice, and if you try to order any of this merchandise, postal authorities will track you down and have you put away where you belong.

But that doesn't mean you can't browse through this catalog and imagine operating one of these sets. What's more, you can start searching for old parts so that you can build one of these famous little radios. It's well illustrated, fun to read, and inexpensive. Order a copy today! 8 1/2 x 11 booklet 24 pages well illustrated

Cat. no. 20455

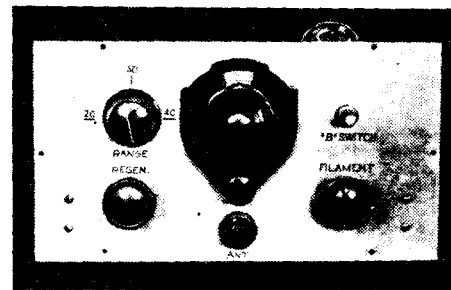
\$6.50

1936 RADIO DATA BOOK

by Radio News Magazine
reprinted by Lindsay Publications

Get the latest radio news by studying the best articles from the 1935 issues of Radio News and Shortwave Radio Magazine.

Learn about the latest developments in television: disk scanning versus cathode ray systems. Discover the brand new metal octal-base tubes and the receivers that use them such as the Atwater Kent 649, the GE A-82,



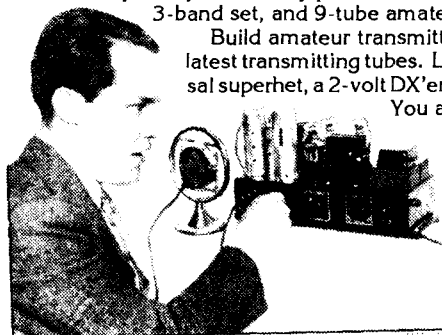
1936 Radio Data Book

and the Super Skyriders. Study plans for shortwave radios: a single tube all-wave set, a 3-band set, and 9-tube amateur receiver, and more.

Build amateur transmitters, a 3/4 meter transceiver, and use the latest transmitting tubes. Learn to build broadcast receivers: a universal superhet, a 2-volt DX'ers Superhet, a Superhet De Luxe, and more.

You also get articles on servicing, audio amplifiers, radio experimenting, station lists and more. Every page is well illustrated with photos, schematics, drawings and tables.

This is a fun book for old-time radio buffs and builders. Another great book for your radio reference library. Get a copy! 8 1/2 x 11 paperback 64 pages Cat. no. 20218 \$5.95



AUTOPOWER

Classic 1935 text on automobile generator conversions and modifications!

AUTOPOWER — Automobile Generator Conversions and Modifications

by S. W. Duncan

reprinted by Lindsay Publications

From out of the Great Depression comes this unusual book on ways to make auto generators produce unusual amounts of power. The major problem with this book is that the generators being rewound are no longer available. Even if you were to find one of the units listed it would now be a hard-to-find part for an antique car. If you were to rewind one of these antique generators, I'd personally drive over and "smack you up 'long side the head!"

If that's the case, then why would I reprint something like this? Simple.

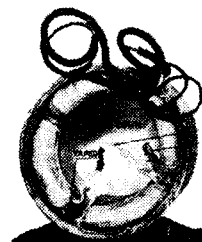
The principles taught here can be applied to

modern generators, DC motors, starter motors and more. You get

detailed, practical how-to that can be adapted to modern needs. In other words, this is raw material for your brain. I can't guarantee your success, but I can guarantee that the info you find here is rare, and that you'll get your money's worth.

Chapters include changing a Ford Model A generator to a 110 volt alternator, get constant voltage at variable speed, converting a Dodge 12 volt generator into

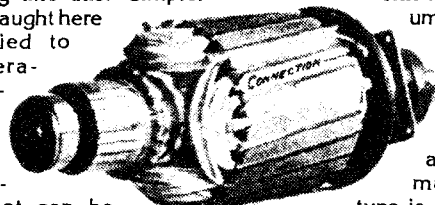
a 110 volt 500 watt alternator, changing a model T to 110 volt AC, making field and armature coils, changing a Delco generator to 110 Volt AC, the winding of automobile armatures, characteristics of DC generators, suggestions on mechanical construction of generators, figuring a new winding for an old frame, converting a farm light plant to 110 volt AC, and a chapter of definitions.



This is a heavily illustrated volume, wall-to-wall how-to.

We reproduced this from a stained, greasy, and obviously used copy of the original 1935 edition. We managed to clean it up to a remarkable degree, but the type is light in some places and some photographs are dirty. Although it's not perfect, it reproduced surprisingly well all things considered.

Get a copy of this. It's great even if it is old. This is one of those manuals that people talk about having seen years ago, but can no longer find. It's worth having a copy just for reference. Order a copy today. 5 1/2 x 8 1/2 paperback 56 pages Cat. no. 4791 \$4.95



Gernsback's EDUCATIONAL LIBRARY

Gernsback's Educational Library
reprinted by Lindsay Publications

In the late 1930's Hugo Gernsback's Radio Publications company in New York published a series of ten shortwave radio booklets to satisfy the public's growing interest in building and operating shortwave sets.

Each booklet is 32 pages in length, is well illustrated, and has a brilliant yellow cover. Each covers a different topic from radio construction to electrical experiments to television.

You'll find these little booklets fascinating reading, full of ideas, and you'll find each to be a slice of early radio history back when radios were built on breadboards with handtools instead of printed circuits.

The original booklets were printed during the Great Depression on inferior quality paper and are now quite rare. But you can get high quality copies on quality paper and enjoy them again.

Order a set today!

No. 1 How to Build 4 DOERLE SHORTWAVE SETS

Build the 2-tube 12,500 mil "Doerle" short-wave receiver and the 3-tube signal gripper. You then get instructions on modifying these two basic radios into a bandspread receiver and an 110 VAC operated version.

Cat. no. 820 \$2.25

No. 2 How to Make Most Popular All Wave 1 and 2 TUBE RECEIVERS

Build a Megadyne one-tube loudspeaker set, a beginner's 1 tube AC-DC set, a four-in-two all-wave all electric 2-tube set, a super-regenerative single-tube loudspeaker set, a portable 2-tube battery loudspeaker receiver, and a beginner's one-tube all-wave battery set.

Cat. no. 821 \$2.25

No. 3 ALTERNATING CURRENT FOR BEGINNERS

Study theory, and perform home experiments with AC such as lighting a lamp induction, making a simple electric horn, watch demagnetizer, simple test for motor armature defects, bell-ringing transformer, charging storage

batteries from an AC source, simple test for condensers, AC electromagnets, magnetic levitation, simple motors, lamp dimmer, and more.

Cat. no. 822 \$2.25

No. 4 ALL ABOUT AERIALS

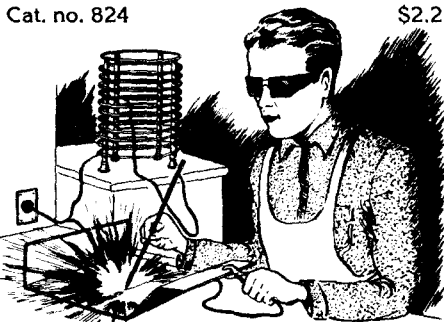
Part one covers receiving antennas with notes on tuned antennas, broadcast antennas, low impedance transmission line, doublets for shortwave, transposed leadin, a SW antenna tuner, antenna construction, a double-doublet all-wave antenna, doublet installations and more. Part II covers transmitting antennas for amateur stations including the half-wave antenna, output matching circuits, construction, the Zepp, a counterpoise system, and more.

Cat. no. 823 \$2.25

No. 5 BEGINNERS' RADIO DICTIONARY

A complete 32 page dictionary for beginners. Obviously, most the terms are still in use, but some are not. Brief definitions and a number of illustrations are provided. Learn about acceptors, counterpoise, ferromagnetic modulation, interrupter, keying flicker, strays, water rheostat and much more.

Cat. no. 824 \$2.25



No. 6 How to HAVE FUN WITH RADIO

Unusual experiments! Try the "Talking Newspaper" which is nothing more than a loudspeaker made from aluminum foil and newspapers! Also try talking gloves, radio electric chair (put a frying pan in your pants), visual music, dancing to silent music, musical and talking gadgets, the radio dancer, home broadcasting, the door that talked, and more!

Cat. no. 825 \$2.25

No. 7 How to READ RADIO DIAGRAMS

Learn how to translate radio diagrams into physical equipment. You get pictures, definitions, and equivalent symbols of radio components. Then you'll see circuit diagrams for a variety of circuits from crystal sets to multi-tube radios as well as the physical layout they represent. Basic information, but essential to



radio newcomers in 1938.

Cat. no. 826 \$2.25

No. 8 RADIO FOR BEGINNERS

Learn about wave analogies, principles of transmitting, and receiving principles. A lengthy section on receiving instruments will show you how tank circuits tune to particular wavelengths and how tubes and other components perform their jobs. You also get a section on antennas and aerials. Another essential booklet for the beginner.

Cat. no. 827 \$2.25

No. 9 SIMPLE ELECTRICAL EXPERIMENTS

Build a galvanometer, experimental magnet, simple motor, electric shocker, microphone, arc lamp, electric furnace, arc welder, a home-made key, batteryless flashlight and more. Perform tricks with telephone receivers and experiments with lamps, neon lamps, condensers, talking condensers, static electricity, and more. You'll find a brief section on making a magnet, on rheostats and how to use them, rectifiers, simple measuring instruments, heat or cold from junction of dissimilar metals, handy wire gauge, musical instruments, and more.

Cat. no. 828 \$2.25

No. 10 TELEVISION

In 1938 this was high-tech electronics! You get a primer of television, including details on mirror scanning, Scophony system, and movies for television. Study the kinescope or cathode ray tube and how the sweeping beam is synchronized. Learn about receiver antennas, how TV programs are broadcast, network TV, and even a Scophony system for color television! Quite interesting.

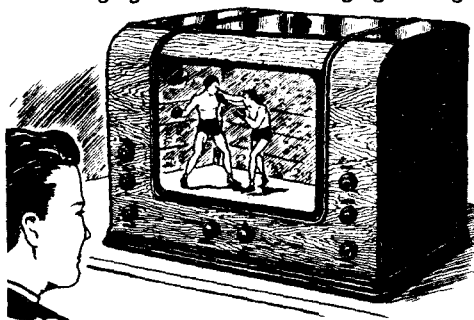
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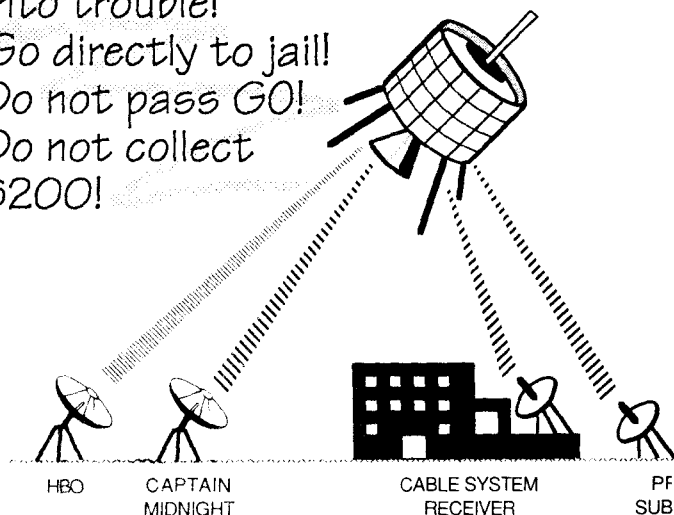
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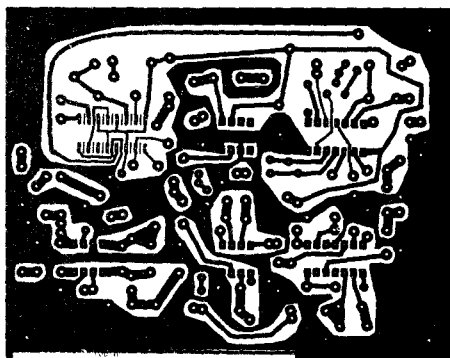
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into trouble!
Go directly to jail!
Do not pass GO!
Do not collect
\$200!



UNSCRAMBLE VIDEO!



VIDEO SCRAMBLING & DESCRAMBLING for Satellite & Cable TV by Graf & Sheets

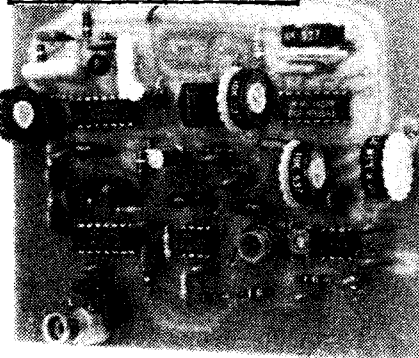
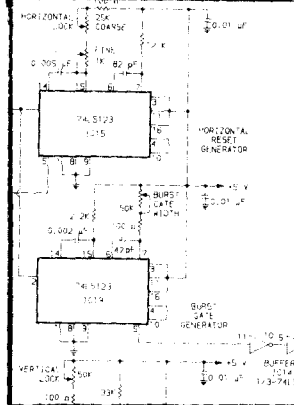
If you have purchased or plan to purchase a satellite dish to capture signals coming from the many Earth-orbiting satellites, this book is for you.

You get:
•An understanding of encoding/decoding systems

- The theory and techniques of video encryption and decryption
- An overview of the rules and regulations governing the availability and use of satellite signals, antennas, and programming materials
- Schematics and details for several encoder and decoder projects.

Originally published in 1987, this book provides detailed information on everything from simple cable encryption systems to commercial satellite systems such as VideoCipher II™, the B-Mac System, and even the Data Encryption standard.

Although the authors are quick to point out that the information is not be misused in theft of signal, they have provided a wealth of schematics, printed circuit board layouts, IC chip specs, patent reprints, list of satellites and the scrambling systems they use and much more. This is a quality master reference that any video/satellite fanatic will find useful. Order a copy today! 8 1/2 x 11 paperback 246 pages Cat. no. 370 \$24.95



Photocells and Their Application

**PHOTOCELLS
and Their Application**
by Zworykin
and Wilson
reprinted by
Lindsay Publications

Here's a fascinating book! Zworykin is credited with making television practical by developing the iconoscope

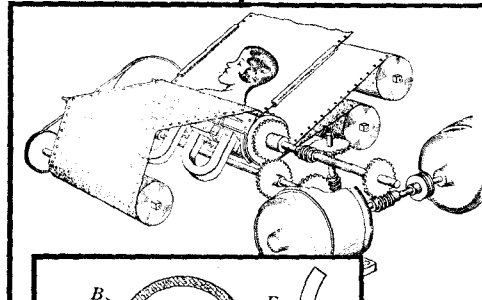
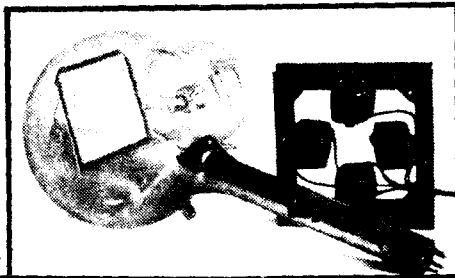
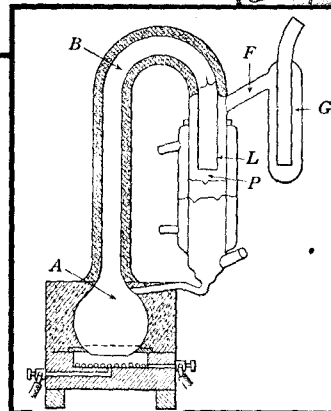


photo-voltaic cells, photocell output and amplifying tubes, optimum outputs of photocells, the problem of amplification, special light-sensitive devices, the photocell in photometry and colorimetry, the photocell in



sound movies, the photocell in facsimile, the photocell in television, miscellaneous applications, and photocells in the future.

You get great illustrations from vacuum pumps, cesium-oxide cells, and amplifier schematics, to a Zworykin multiple cell, Nipkow TV system, and early FAX machine. This is easy-to-read and covers great material. There is a little math, some of it heavy, but what do you expect? This was written for engineers.

There is limited material on cells which produce electricity directly from sunlight such as the Rayfoto cell, the Photolytic cell, the Ruben cell, the Grondahl-Gieger cell (a copper oxide cell the plans for which are offered elsewhere in this catalog), the Sperrschicht cell, and others. You won't get how-to-build instructions, but you might very well get the bits and pieces that lead you off into a new direction of experimentation, or provide you with new ideas to research in technical literature.

This is a great book presenting rare information. And it's written by a giant in the history of television. It's easy and fun to read. The illustrations are great. Yes, you know I'm strange, but I think that you'll enjoy reading this as much as I do. I like it. I think you will too. 5x7 paperback 348 pages Cat. no. 20560 \$11.95



Chapters include historical introduction, radiant energy, photo-emissive effect, photosensitive films, material and apparatus for making photocells, general methods of preparing photocells, the vacuum photocells, the gas-filled photocell, photo-conductive photocells,

Early FAX & TV Equipment!

VISION BY RADIO

Radio Photographs
Radio Photographs

by C. Francis Jenkins

Go back to 1925 and discover the latest devices developed to transmit photographs, in other words, the earliest fax machines and the earliest televisions!

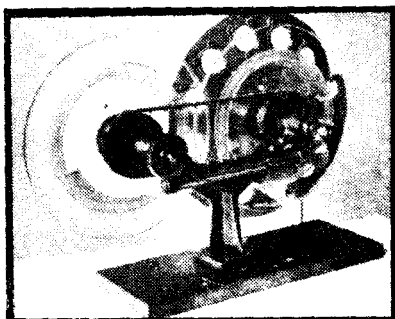
This is an amazing book! You get details on the electrical components that existed at the time, the tests that had been tried, correspondence from famous people, and historical notes.

The most interesting section, I think, is illustrated review of existing machines: Nipkow & Sutton, the Amstutz system, the Electrograph, the Baker machine, the Dr. Korn Machine, the Rignoux and Fournier Scheme, the Belin machine, the AT&T machine, RCA's machine, the Braun Tube receiver, pictures by radio in natural colors (1), prismatic disc machines, the Jenkins prismatic ring, Jenkins synchronizing forks, Jenkins pic-

ture-strip machine, Jenkins Duplex machine, talking machine photographs, radio vision (television), Jenkins high speed camera, and more.

Obviously, this book was written and published to glorify Jenkins and Jenkins Laboratories Inc (no doubt so he could make more money). But it delivers more photos, drawings, and patents on early fax and TV equipment than I've ever seen anywhere before.

It's really good, and the price we ask is a mere fraction of what



you'd pay for an original if you could find one. Rare information! Excellent book. Get a copy! 5 1/2 x 8 1/2 paperback 140 pages Cat. no. 20200 \$9.95

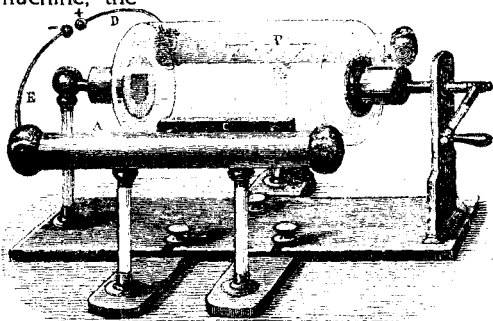
Silliman's ELECTRICAL MACHINES

reprinted by
Lindsay Publications

If you'd like to build a powerful lightning bolt generator, this is a publication you should study for ideas. You get beautifully illustrated pages from Benjamin Silliman's book entitled Principles of Physics or Natural Philosophy published in 1865.

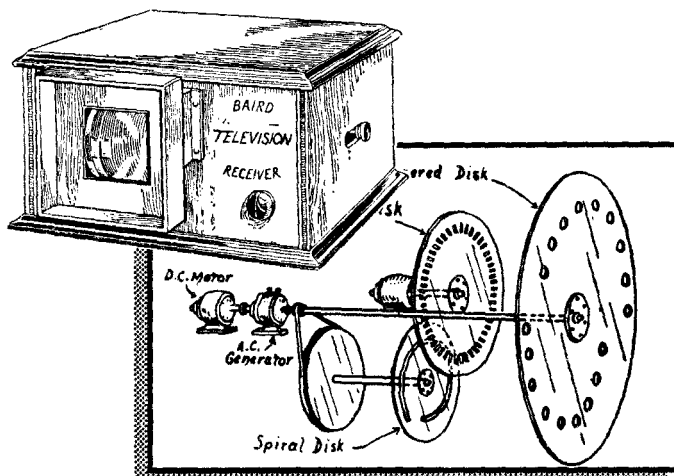
Silliman's Electrical Machines

Learn about electrophorus, the cylinder electrical machine, Ramsden's plate machine, the American plate machine, Ritchie's double plate machine, the Tylerian machine, care & management of machines, electricity from steam, and other sources of electrical excitement. Discover seven simple but entertaining ex-



periments. Then investigate equipment to store electricity such as the Æpinus condenser, Volta's condensing electroscope, Dr. Hare's single gold leaf electrometer, the Leyden jar, Leyden jar batteries, the spark, Kinnersley's thermometer, electrical discharge in a vacuum, the diamond jar, scintillating tube and magic squares, chemical experiments, Volta's lamp and more.

This is another collection of rare static electricity information that is no longer found in modern physics textbooks. And wood cut illustrations like these haven't been produced in decades. Get a copy of this. It will make an excellent addition to your reference library. 5 1/2 x 8 1/2 booklet 24 pages Cat. no. 840 \$3.25



EXPERIMENTAL TELEVISION

Build a 1932 TV Station!

Experimental Television

by A Frederick Collins

reprinted by Lindsay Publications

Build yourself a television station! No, not with iconoscopes, vidicons, nor CCD's, but with those crazy scanning discs that Nipkow devised. Go back to 1932 and let Collins show you "a series of simple experiments with television apparatus and also how to make a complete home television transmitter and television receiver."

Chapters include experiments with light, with vision, with the scanning disk, with the photo-electric cell, with the amplifier tube, with glow tubes and neon lamps, with electric waves, with synchronism, with cathode rays and the oscillograph tube, how to make a television transmitter, and how to make a television receiver. And it comes complete with 185 illustrations by author himself.

You'll learn how to fabricate the scanning discs, synchronize them, make a selenium cell (probably with dangerous,

toxic chemicals), use synchronous motors, build vacuum tube circuits and much more. Although

Collins is known

for his books

for boys, be-

cause of the

complexity of

this equip-

ment, this

book is aimed at

readers of all ages.

If you're lazy (or just want top rate quality), you can buy a Camcorder. But if you want to impress your neighbors and reinforce your reputation for being the local mad scientist, build this 1932 vintage

TV station. You'll

hear- "How did

you know how

to do that?"

Don't tell

them you read it

in a book! Make

'em think you're

Tesla reincar-

nated. Careful,

though! If you over

do it, they might

have you put away!

Fascinating

book. It's hard to

believe that TV engineers even seriously considered mechanical

scanning. Rare book. If you're

lucky enough to find an original of

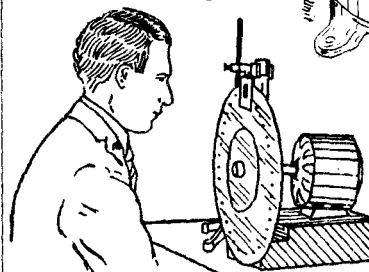
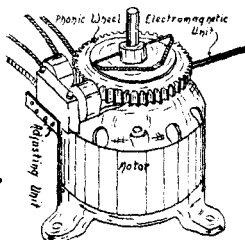
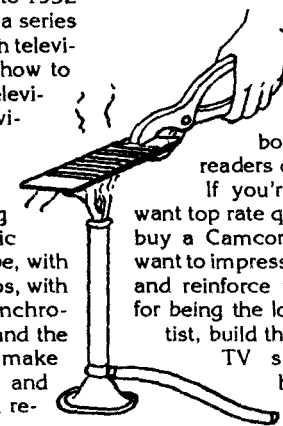
this, it will cost you many times

what I'm asking. Worth having.

Order a copy today. 5 1/2 x 8 1/2

paperback 313 pages

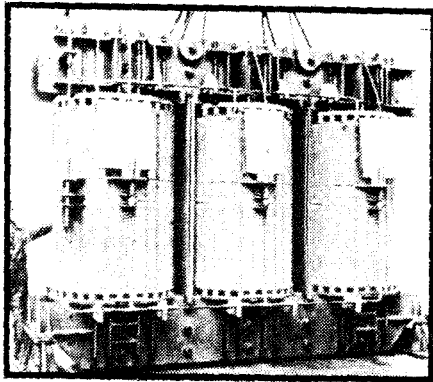
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Introduction to MAGNETISM

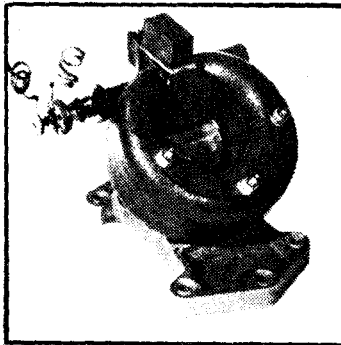
Not too
simple
Not too
complex
Just
right!

MAGNETISM — An
Introductory Survey
by E. W. Lee



The back cover of this book explains it all very well...

"The lodestone was known to the ancient Greeks; the Chinese knew of the compass a thousand years ago; in the 16th century Gilbert described magnetic poles. Professor Lee takes us through the early experiments to the first modern accomplishments of Oersted,



Ampere and Faraday. We then learn the principles behind electric motors, dynamos, transformers, permanent magnets, synchrotrons, solenoids, memory banks in computers, betatrons, magnetic supercooling, and other modern applications....

"The author shows us how magnetism 'works,' with reference to such concepts and principles as lines of force; ferromagnetism; the atomic theory of matter in relation to electromagnetic properties; paramagnetism and diamagnetism; quantitative measurement of magnetic force; domains and

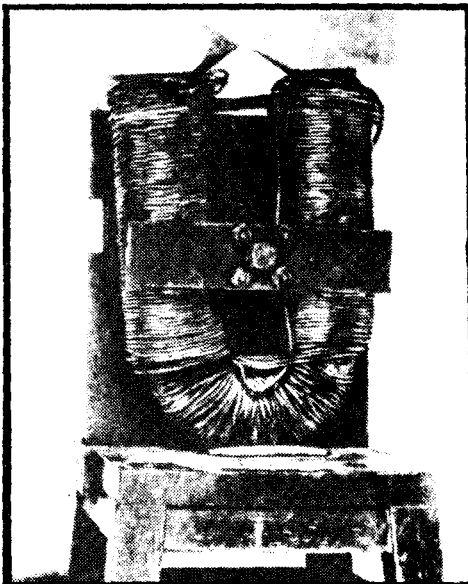
domain boundaries; high-permeability alloys, their theoretical basis and uses; magnetic matrices used as computer-age storage devices; ferromagnetism and antiferromagnetism; the use of magnetism in modern scientific research; and problems of the earth's magnetism, including its meaning to Wegener theory of continental drift and solar phenomena."

You get 60 diagrams and sketches and more than 32 pages of photographs. If you want to explore the theory, you can study the mathematics that explains magnetism.

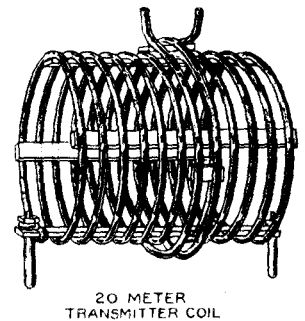
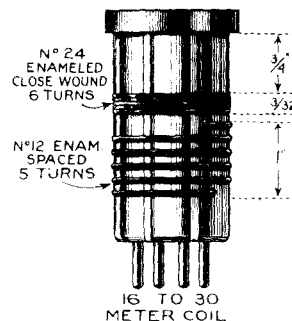
This is one heck of a lot of book for the money. And it's must reading for basement engineers, experimenters, even the guy who's trying to build a magnetic motor or perpetual motion machine. Great background information. Order a copy. 5 1/2 x 8 1/2 paperback 281 pages

Cat. no. 365

\$6.95



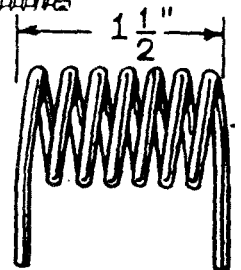
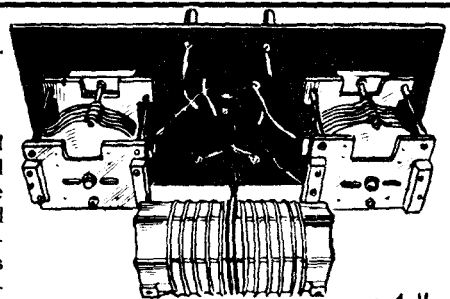
SHORT WAVE COIL DATA BOOK



SHORTWAVE COIL
DATA BOOK
by Radio
Publications

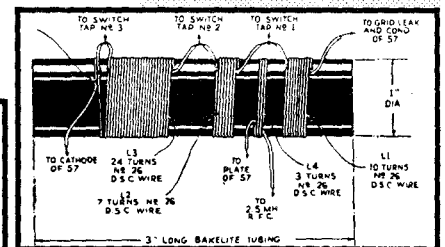
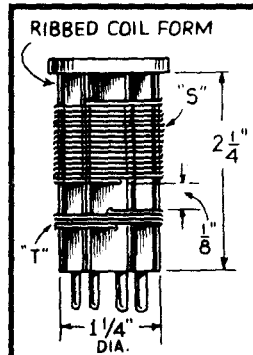
Coils! Coils! Coils! They're the heart and soul of shortwave radio receivers and transmitters. A properly wound low-loss coil can make the difference between having an average piece of gear or a hot performer. And it seems the simpler the receiver, the more important the coils.

Here in one jam-packed booklet from 1937 are hints, tips, charts to help the shortwave radio builder design and build the best coils possible. You get informative articles from Gernsback magazines such as



- Coil Data for TRF Receivers
- The One Tube Olscllodyne Coils
- The Mono-Coil
- 2 Winding Coils for 10-500 Meters
- Coils for a 3 Tube Band Spreader
- and many others

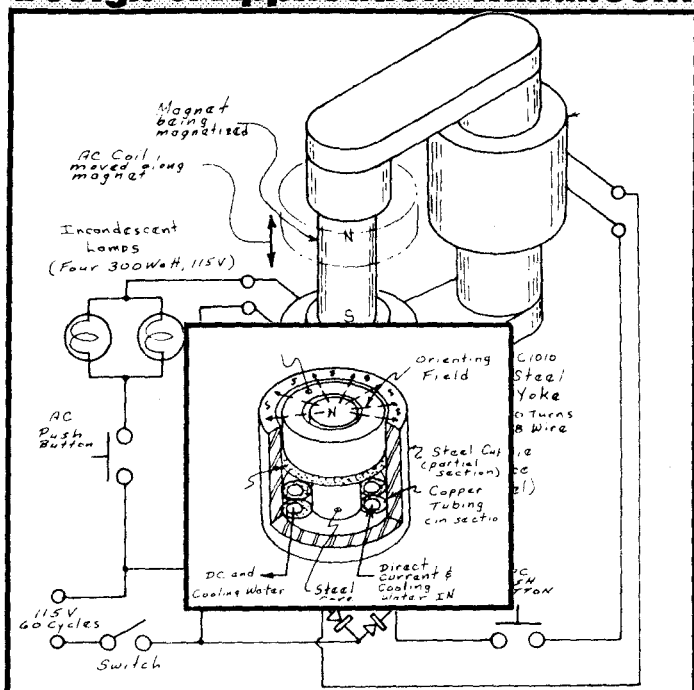
You also get nine different circuit diagrams for the "Most Popular SW



Tuning Circuits" and five "Transmitting Circuits employing the coils described".

This is highly specialized information on just one important topic essential to successful radio construction. It's only 16 pages but it's quite inexpensive and delivers. Get a copy! 8 1/2 x 11 booklet 16 pages
Cat. no. 830 \$1.95

Permanent Magnet Design & Application Handbook!



PERMANENT MAGNET DESIGN & APPLICATION HANDBOOK

by Lester Moskowitz

Back in print! For now at least... The best magnet book I've seen.

Opening this book gives you the feeling you've opened the lab notebook of a famous magnet scientist. It's loaded with drawings, diagrams, equations, notes, hints, tips, circuit diagrams and more.

Chapters include brief history of magnets, terms and definitions, classification of magnets and materials, basic manufacturing processes, fundamentals of magnetism, general design considerations, leakage and fringing, circuit effects, exact design methods, and on and on.

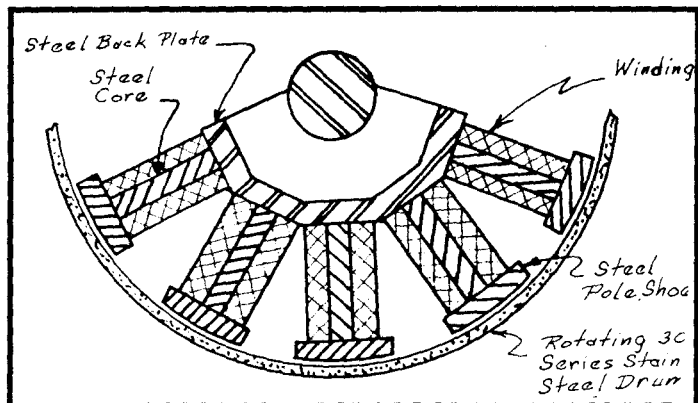
You get all kinds of informa-

tion and making, testing and using magnets from a circuit diagram for a 100 joule impulse magnetizer to suggestions for use in magnetic drives, motors and magnetos, magnetic welding benches and much more.

Expensive! But the best book of its type I've ever seen. Just the right mix of theory and practical application. Rare information. If you think you'll ever need it, get it now. It went out of print once, and is being reprinted (probably only for a short time) by another small publisher. I'm glad to see it's back. 9x12 hardcover 443 pages heavily illustrated

Cat. no. 1149

\$65.00



ELECTRO- MAGNETS HANDBOOK

Solenoids, Electromagnets
and Electromagnetic Windings

by Charles R. Underhill

reprinted by Lindsay Publications

Creating an electromagnet is quite easy as Faraday discovered, and as you and I know. But creating an electromagnet that generates a field of needed intensity, drawing minimal amperage at available voltage without overheating is not so easy. Few people know how it's done. Here you'll learn the secrets of creating working electromagnets.

Chapters include: magnetism and permanent magnets, electric circuits, electromagnetic calculations, the solenoid, practical solenoids, iron-clad solenoid, plunger electromagnets, electromagnets with external armatures, electromagnetic phenomena, alternating currents, AC electromagnets, quick-acting electromagnets and methods of reducing sparking, materials and bobbins, insulation of coils, magnet wire, insulated wire, windings, forms of windings, heating of windings, and tables and charts. There are also 233 illustrations listed showing everything from a practical multiple-coil winding to rim solenoids telescoped to form disk solenoids.

Underhill was a consulting electrical engineer who put this book out in 1910 and created this 2nd edition in 1914. This is reprinted from one of the fourth thousand printed in 1921.

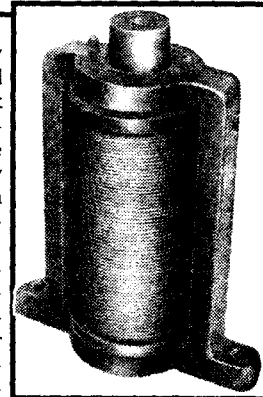
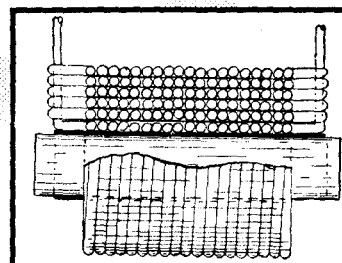
You get a practical book. The math you get is completely practical and useful. The charts are practical. All of the information is practical.

Some things have changed since 1921 such as better insulation and higher-permeability iron, but amps are still and amps and Oersteds are still Oersteds.

Why not build a powerful electromagnet and put it in the bushes outside your house? Pulse the juice to it, and you can roll cars over on their side as they drive by! Imagine the effect it would have on that steel plate your mother-in-law had to have installed in her head after you attacked her with the ax handle! Imagine the fun!

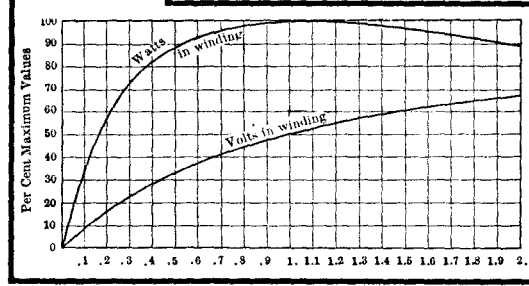
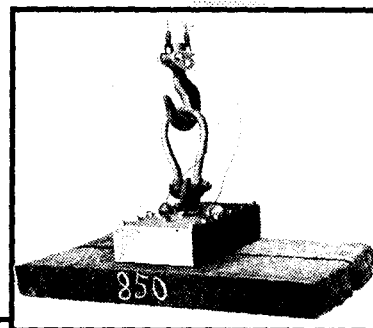
Or build that perpetual motion machine that some people claim is possible. Or how about a flying saucer? Or how about just getting a copy for your reference library?

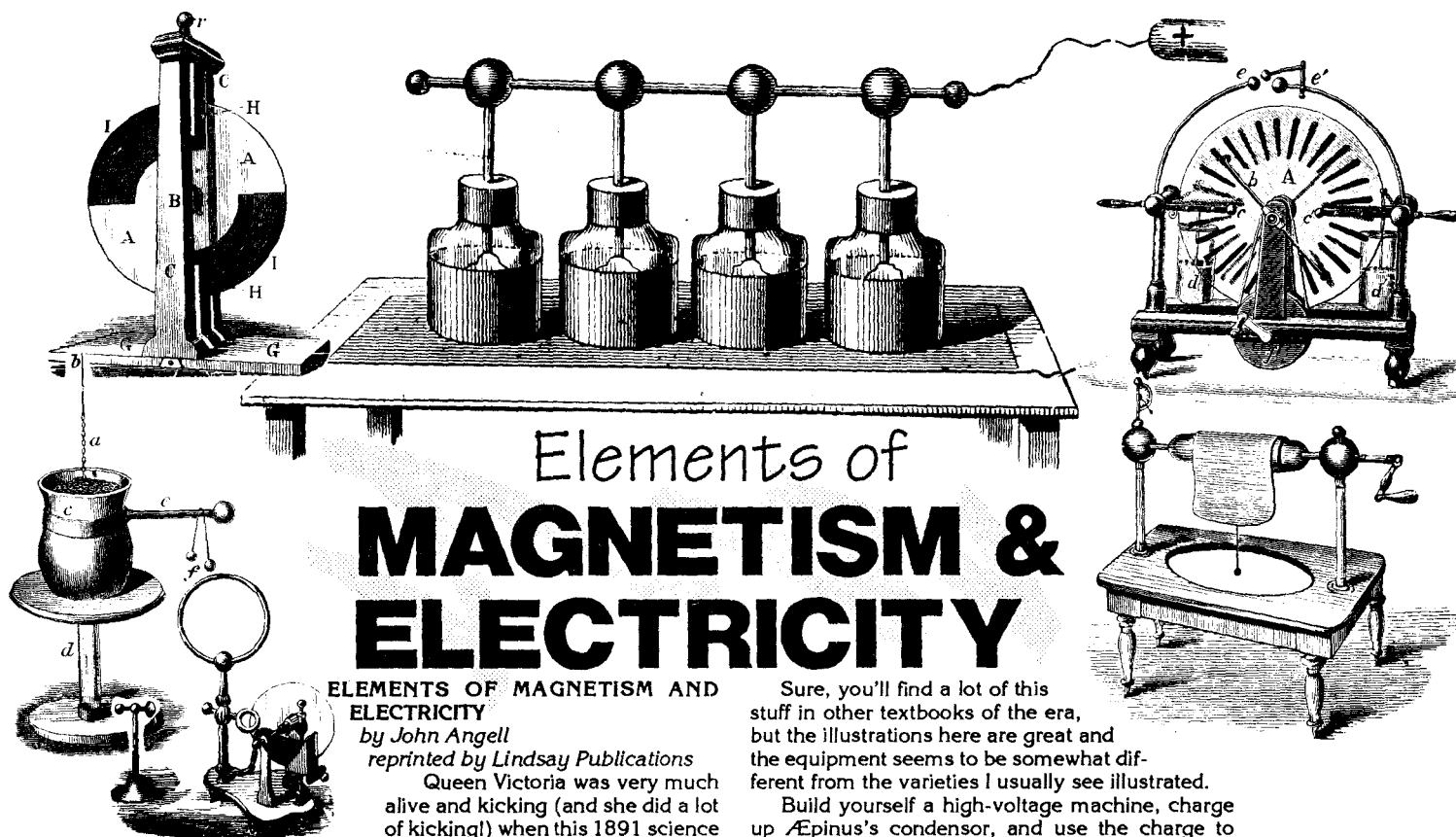
When the need arises, you'll have rare information immediately available. Excellent book. Get one! 4/12 x 8 paperback 342 pages Cat. no. 20960 \$12.95



NEW!

NEW!





Elements of MAGNETISM & ELECTRICITY

ELEMENTS OF MAGNETISM AND
ELECTRICITY

by John Angell

reprinted by Lindsay Publications

Queen Victoria was very much alive and kicking (and she did a lot of kicking!) when this 1891 science text hit British schools. It had apparently been in print in various editions since 1867.

It's a great book because it presents "practical instructions for the performance of experiments, and the construction of cheap apparatus." And half the book, which is so beautifully illustrated, covers static electricity equipment.

Chapters include natural magnets or lodestones, artificial magnets, terrestrial magnets, history of frictional electricity, electroscopes and electrometers, electrical induction, frictional electrical machines, distribution and tension of electricity, the Leyden jar, and experiments. The last two chapters deal with voltaic or current electricity and its use in electroplating, the telegraph, induced currents, magneto-electricity and thermo-electricity.

Sure, you'll find a lot of this stuff in other textbooks of the era, but the illustrations here are great and the equipment seems to be somewhat different from the varieties I usually see illustrated.

Build yourself a high-voltage machine, charge up Aepinus's condenser, and use the charge to create electrical hail inside a bell jar, or take an electrical portrait. Try Faraday's ice pail experiment. Or build equipment that will make your back bedroom look like Frankenstein's laboratory! Who knows? You might even get arrested for impersonating a mad scientist... or a politician. I can't tell the two apart...

A great little book loaded with hard-to-find information. Fun reading. Great ideas for static electricity fanatics. And that means you, son. Get a copy. A goody from merry ol' England. Oh! And this copy came from the "Methodist Sunday School Library" on Exmouth Street. So you know Queen Victoria would approve of your experiments. Order a copy, and get started! 4x7 paperback 264 pages
Cat. no. 20862 \$8.95

BUILD ELECTRICAL APPLIANCES!

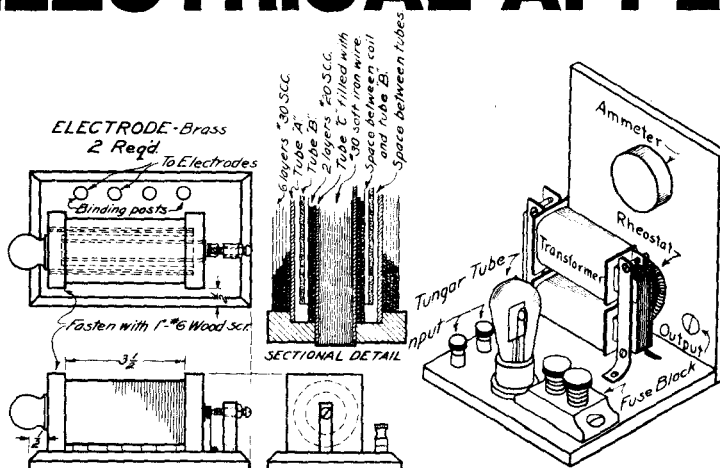
Practical Problems
in Electrical Construction

by Perry & Buck

reprinted by Lindsay Publications

Try your hand at building simple electrical appliances! How many people on your block can build an electric toaster? It's about as simple an electrical device as you'll find. And yet no one knows how.

Let this 1923 technical school plan book show you how to build a high-voltage induction coil, wire-wound rheostat, a buzzer, a sign flasher, a soldering iron, a crystal radio, a transformer, a Duram regenerative receiver, a 110 VAC electric motor, and more.



In addition you get charts of wire sizes, screw sizes and other miscellaneous data to help in construction. The instructions are quite brief, but adequate. And each plan is well illustrated.

This is a small book but well worth the price. It's funny how few plans there are around for simple things. You can find plenty of info on building computers, but only here will you learn how to build a toaster! It's getting to the point in this high-tech world that the simpler something is, the more impressive it is. Get a copy! 5 1/2 x 8 1/2 paperback 67 pages
Cat. no. 4767 \$4.95

Secrets of Building Electrostatic Lightning Bolt Generators

by Walt Noon

You can generate high voltage with AC transformer devices like the induction coil and Tesla coil, or you can make lightning bolts with electrostatic DC devices like the Van de Graaff generator. Walt Noon, the frenetic electrical experimenter, shows us some of the things he's discovered in his quest for high voltage.

He'll show you and explain the experiments he has run, the problems he has encountered,

his solutions to those problems, ways to build low cost lightning bolt generators, ideas that yet need to be explored and much more.

If you're looking for a heavy, theoretical text or a step-by-step construction manual, then this won't cut it for you. BUT! if you want general instructions that will allow you to build high voltage machines out of what you have on hand, and then improve them, you need this.

Walt covers the electrophorus, his Rotostatic generator, his bizarre "Cat-o-Static" generator, motor speed controls, external Van de Graaff generators,

the classic internal Van de Graaff generator, ideas for an extremely high voltage Van de Graaff, inductive electrostatic generators, the Dirod generator, and more.

Secrets of Building Electrostatic LIGHTNING BOLT GENERATORS

including high voltage test equipment, experiments, motors and more!

HOT Seller!

You'll find the equipment Walt has used to measure the voltages he has generated including his FET electroscope, neon lamp banks, spark gap volt meters, and more. Walt will show you how to build storage capacitors along with details of his successes and failures.

You get a list of interesting experiments to perform from something as simple as making your hair stand on end to building a "perpetual motion" machine. You'll

learn about a variety of ion motors, ion blowers, the Franklin electrostatic motor, the Poggen-

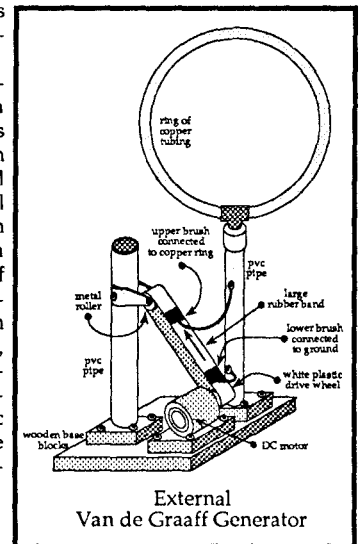
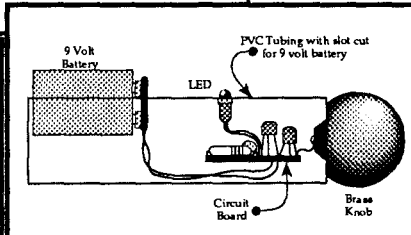
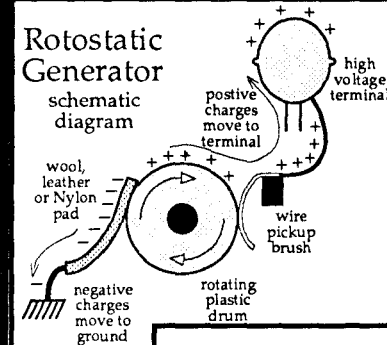
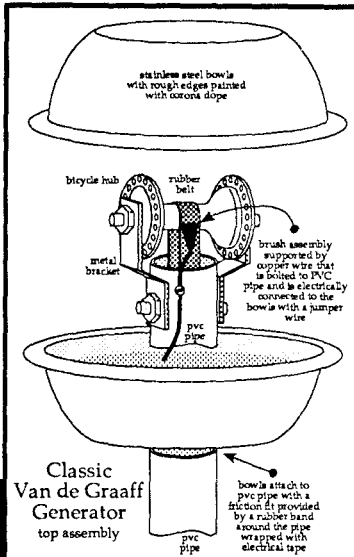
dorff Corona Motor, and even capturing free electrical energy from the atmosphere (Ben Franklin did this, and it almost killed him!) As a bonus Walt will show you how he electroplates metal onto non-conducting forms to build low-loss high voltage terminals!

Walt is not a scientist nor a fantastic author. But he will clearly and humorously explain some of the crazy experiments he's tried and hopes you'll improve on. You get an easy-to-read text loaded with photos and drawings. You'll find that it's really quite easy to get started in electrostatics, and Walt's book will get you going!

Excellent book! Worth having. Get a copy. 5 1/2 x 8 1/2 paperback 91 pages

Cat. no. 20900

\$8.95



Three Remarkable Books by Gordon McComb!

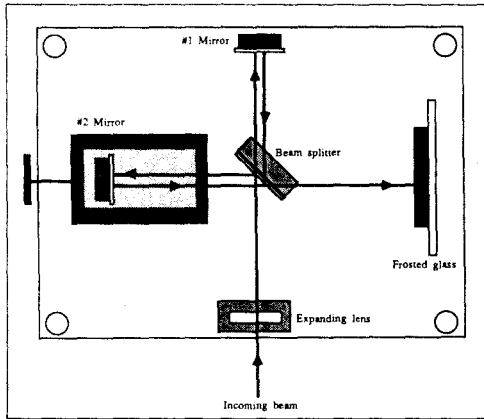
THE LASER COOKBOOK 88 Practical Projects by Gordon McComb

From the back cover: "The 88 laser-based projects presented here are geared toward the garage-shop tinkerer on a limited budget. Spanning a wide range of disciplines, the projects vary from experimenting with laser optics and constructing a laser optical bench to using lasers for light shows, gunnery practice, even beginning and advanced holography..."

There is even information on electronic construction techniques, how to buy laser components, when to buy surplus or new, and how to get what you really want! ..."

Chapters include build a He-Ne Laser Experimenter's System, Constructing an Optical Bench, Build a Michelson Interferometer, Advanced Holography, Experimenting with Laser Weapons Systems, and 19 others.

If you're wanting to experiment with lasers, this is the place to start - a whale of a lot of info in one book. Consider it carefully. 7x9 paperback 404 pages
Cat. no. 382 \$19.95



GADGETEER'S GOLDMINE! by Gordon McComb

Here, in a single book, are 55 off-the-wall devices you can build.

You get a Jacob's ladder, plasma sphere generator, induction coil, Van de Graaff generator, Tesla coil, Kirlian camera, piezo film speaker and amp, He-Ne laser pistol, variable-rate strobe light, radiation detector, universal receiver, superconductor disc, see-in-the-dark viewer, shape-memory alloy, espionage devices, robots, and more!

And this is good stuff! - plenty of detail: illustrations, diagrams, how-to text. The list of suppliers is quite impressive, too. This is a book every unorthodox experimenter should have in his library and never loan. Get one! 7 1/2 x 9 paperback 406 pages
Cat. no. 383 \$18.95

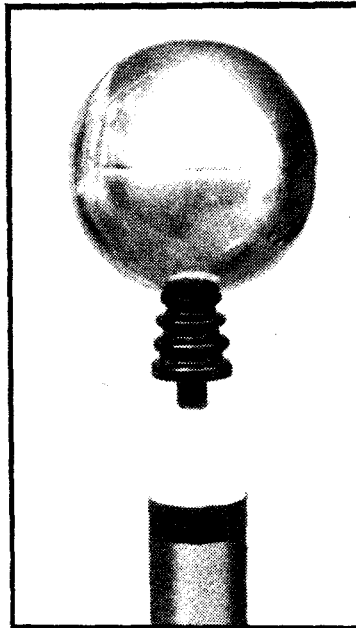
TIPS & TECHNIQUES for the Electronics Hobbyist by Gordon McComb

From the back cover: "Regardless of your level of experience, you'll be able to use this volume as source of ideas, a textbook on electronics techniques and procedures, or as a databook on electronics formulas, functions, and components. Each of the twenty chapters addresses a major aspect of electronics experimentation, such as how to

- buy, use, and get the most from your test equipment
- find and identify inexpensive but quality components
- read schematics and electronic symbols
- build and repair printed circuit boards
- use and understand electronic formulas
- ...and much more."

Chapters include setting up shop, filling the toolbox, electronics test equipment, buying parts, schematics and symbols, component identification, common IC's soldering tips, printed circuit board etching, wire wrapping, benchtop projects, and ten others!

Experiment with modern electronics. Let this handy book show you all the things you need to know. Valuable. Order one. 7 1/2 x 9 paperback 273 pages
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Electrical Recreations

William Peck's
ELECTRICAL RECREATIONS
reprinted by Lindsay Publications

Go back to 1860 and discover static electricity experiments designed to inform and entertain students studying physics in schools and academies.

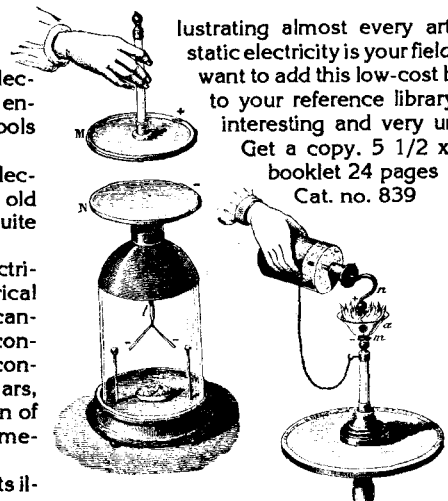
If you've collected other early static electricity works, you'll find some of this to be old hat. But other parts will be new and quite interesting.

Learn about the electrical chime, an electrified puppet, the electrical wheel, the electrical egg, the electrical square, the electrical cannon, the condenser of Epinus, using the condenser, slow and fast discharge of Leyden jars, the Leyden jar, a battery of Leyden jars, the condensing electrometer, electrocution of dogs!, heating power of electricity, and the mechanical effects of electricity.

You'll find fascinating old time wood cuts illustrating almost every article. If

static electricity is your field, you'll want to add this low-cost booklet to your reference library. Very interesting and very unusual.

Get a copy. 5 1/2 x 8 1/2 booklet 24 pages
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Deschanel's Great 1884 STATIC ELECTRICITY

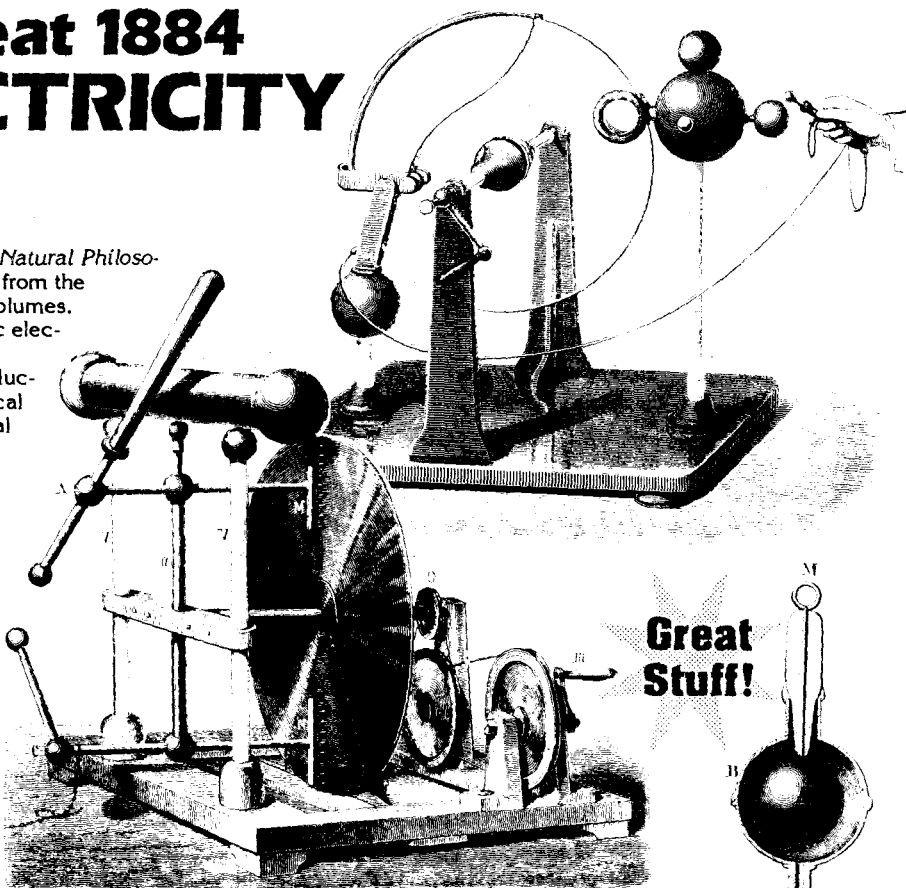
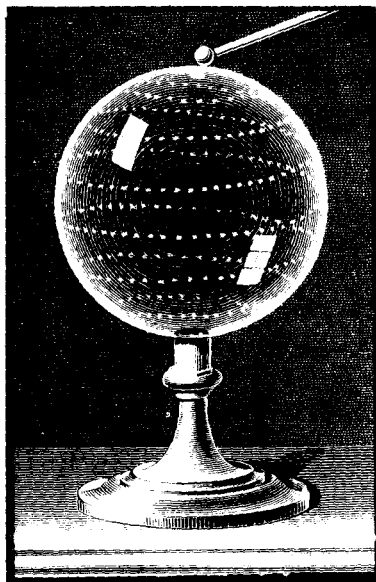
DESCHANDEL'S STATIC ELECTRICITY

by A. Privat Deschanel
reprinted by Lindsay Publications Inc

In 1884 Deschanel's *"Elementary Treatise on Natural Philosophy"* (what we now called physics) was translated from the French and published in the U.S. as a series of four volumes. Here you get just those chapters dealing with static electricity.

You get introductory phenomena, electrical induction, measurement of electrical forces, electrical machines, various experiments, electrical potential and lines of force, electrical condensers, effects produced by discharge of condensers, electrometers, and atmospheric electricity.

You'll find many of the same devices described and illustrated in other books, but these are a bit different. You'll see Nairne's machine,



an unusual variety of Winter's machine, Armstrong's Hydro-electric machine, Holtz's machine, and Bertsch's machine. Just a few of other experiments shown and described are discharge in Torricellian vacuum, the electric egg, the spangled globe, the electric mortar, Leyden jars, the condenser of Aepinus, and the condensing electroscope. You'll see rare and unusual views of the complex portable electrometer, the quadrant electrometer, and many others.

This is a detailed textbook with really great

illustrations, excellent text, and even math to back up the theory. Yes, much of this information is available in other books, but this one of the best dissertations I've seen anywhere. And you're sure to get many new ideas. Every static electricity experiment, at the very least, should have a copy for reference. You'll like it. Get a copy! 5 1/2 x 8 1/2 paperback 112 pages Cat. no. 20722 \$7.95

Static Electricity!

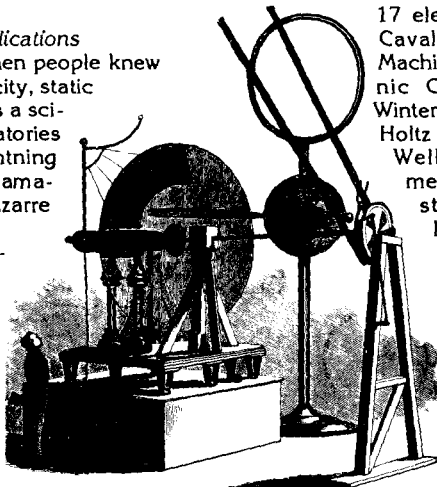
STATIC ELECTRICITY

by J. H. Pepper
reprinted by Lindsay Publications

Back in the 1880's when people knew little about current electricity, static or frictional electricity was a scientific curiosity in laboratories and parlours. Giant lightning generators were built by amateurs and educators and bizarre experiments performed.

From Pepper's *"Cyclopaedic Science Simplified"* we've reprinted the chapter entitled *"Electricity, Frictional or Static"*, one of the best textbook discussions we've found yet.

You get a detailed discussion of electroscopes,



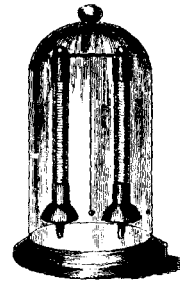
17 electroscope experiments, Cavallo's Cylinder Electrical Machine, the Royal Polytechnic Great Plate machine, Winter's electrical machine, the Holtz machine, the Electric Well experiment, experiments in induction, charge storage techniques, lengthy discussion of Leyden jars, the Leyden battery, followed by another thirty experiments including Cuthbertson's Balance Electrometer, the electric bomb, Harris's thundercloud needle, and a couple of machines for generating

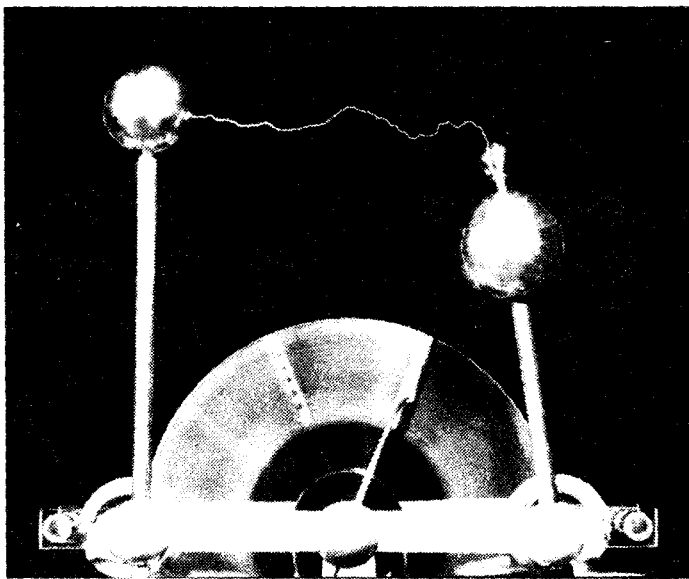
Dozens of Unusual Experiments!

high voltage with a steam jet! And there is much more.

Although this is not really a cookbook for building equipment, the wood engravings are quite detailed, and the text describes the equipment thoroughly enough that you could probably build the devices without great trouble. This is a great source for unusual science fair projects.

If you like to explore old scientific principles, build unusual apparatus, or just impress your friends, consider a copy of this unusual book. I think you'll like it. 5 1/2 x 8 1/2 paperback 88 pages Cat. no. 4783 \$5.95





HOMEMADE LIGHTNING

Creative Experiments in Electricity

by R. A. Ford

From the back cover:

"The author explains how to build an affordable high-voltage generator and then describes how to use the generator safely to conduct your own electrostatics research. Ford has compiled a fascinating collection of experiments to get you started that reveal the wide-ranging impact of electrostatics on motor design, plant growth, medicine, aerodynamics, gravity, photography, meteorology, and much more. Each of these tested, safe and inexpensive projects include thorough instructions and detailed illustrations."

Probably the best part of the book is Ford's Wimshurst machine - a beautifully built machine capable of producing 10 1/2" sparks. You get brief but adequate instructions, drawings, photographs, hints and tips to get this powerful static generator going.

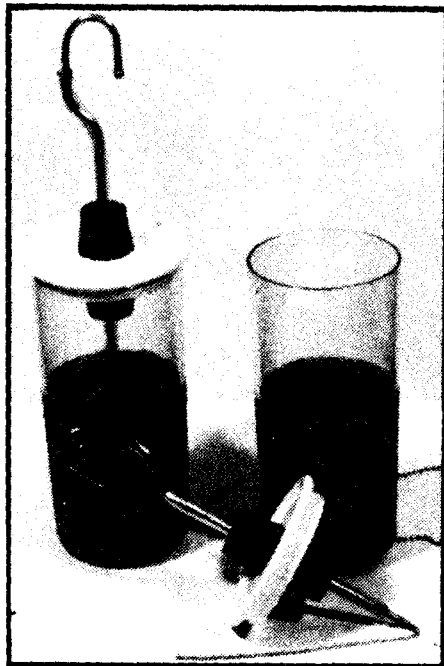
You also get plans for an electroscope, the Leyden jar condenser, and the electrophorus. Ford describes experiments you can perform such as electrostatic motors, electrohiculture, cold light, the levitating rocket, and more. You'll also get historical articles on early electrostatic machines, instruments, and more.

This is an excellent book. It has much the same information you'll find in other books in this catalog, but this equipment is built with currently available materials. I think that if you use this book with the rare classical information found in the old reprinted books, you will be on your way into a new world of high-voltage experimentation.

You'll find this book is about electrostatics, that is, static electricity. There is nothing on AC devices such as the Tesla coil. Good book. Order a copy! 7 1/2 x 9 1/2 paperback 198 pages

Cat. no. 380

\$14.95



Build a High-Voltage WIMSHURST MACHINE

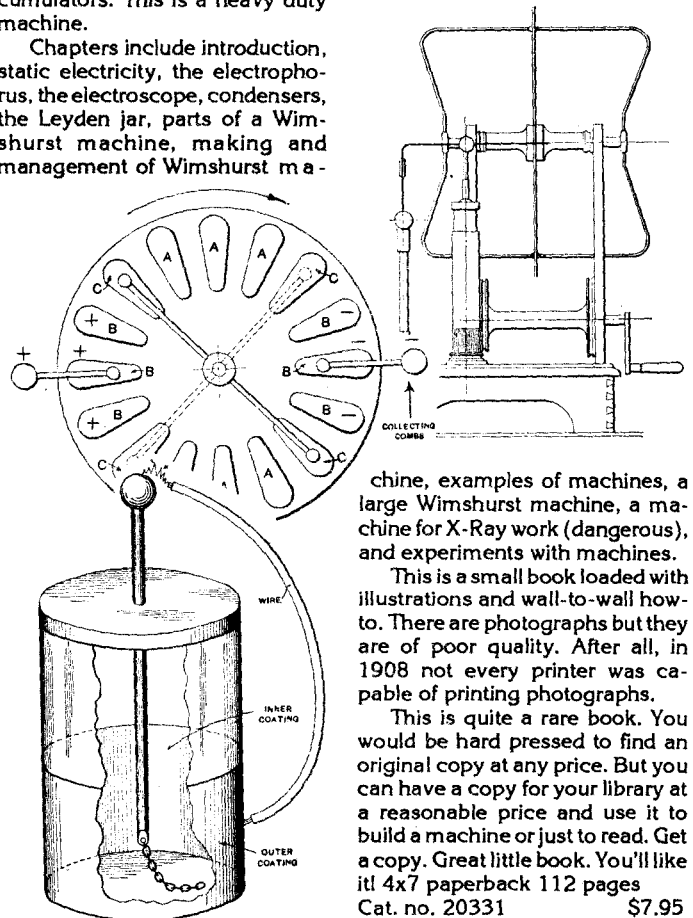
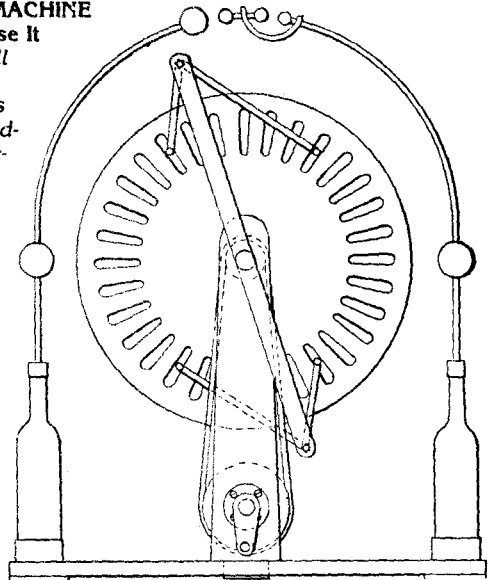
THE WIMSHURST MACHINE

How to Make and Use It
by Alfred W Marshall
reprinted by
Lindsay Publications

"A practical handbook on the construction and working of the Wimshurst machine, including radiography and wireless telegraphy, etc., and other static electrical apparatus."

Build yourself a copy of this classic lightning bolt generator. This is no toy! Its 24" plates will knock your socks off - and probably electrocute you if used with Leyden jar accumulators. This is a heavy duty machine.

Chapters include introduction, static electricity, the electrophorus, the electroscope, condensers, the Leyden jar, parts of a Wimshurst machine, making and management of Wimshurst ma-

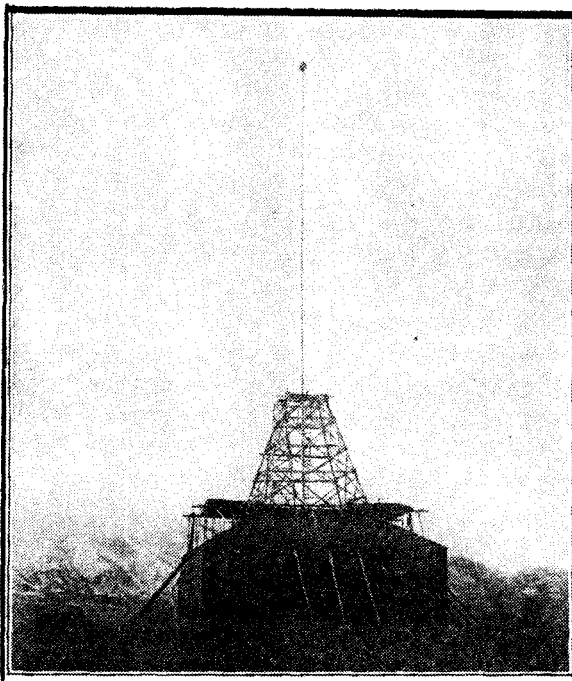


chine, examples of machines, a large Wimshurst machine, a machine for X-Ray work (dangerous), and experiments with machines.

This is a small book loaded with illustrations and wall-to-wall how-to. There are photographs but they are of poor quality. After all, in 1908 not every printer was capable of printing photographs.

This is quite a rare book. You would be hard pressed to find an original copy at any price. But you can have a copy for your library at a reasonable price and use it to build a machine or just to read. Get a copy. Great little book. You'll like it! 4x7 paperback 112 pages
Cat. no. 20331

\$7.95



Experimental Laboratory, Colorado Springs.

**EXPERIMENTS WITH
ALTERNATE CURRENTS
of High Potential & High Frequency**
by Nikola Tesla

"A lecture delivered before the institution of electrical engineers, London, by Nikola Tesla with an appendix by the same author on the transmission of electric energy without wire, reviewing his recent work, and presenting illustrations from the photographs never before published".

Quite a title! Quite a book! There's so much written and published about Tesla (and too much of it is pure garbage), that it is refreshing to have the inventor himself explain his experiments, theories, and plans. It's all here, every page from the original 1904 book — complete with unusual illustrations showing disruptive discharge coils, improved discharger and magnet, luminous discs, single wire and no wire motor, unusual electric lights for use with the high-frequency AC that is generated by the Tesla coil, and much more.

The last fourteen pages of the book is a reprint of Tesla's article from the March 5, 1904 issue of "Electri-

Tesla's Experiments
with Alternate Currents of

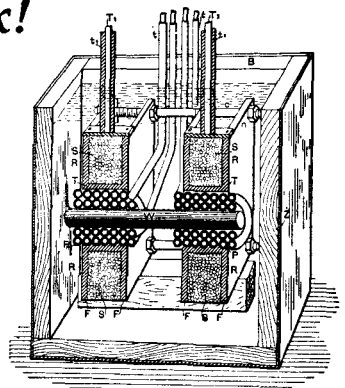
HIGH POTENTIAL HIGH FREQUENCY

*Power transmission
without wires: the
London Lecture plus
a 1904 magazine
article on the
Colorado Springs
experiments! Rare
book!*

cal World and Engineer" complete with photographs of the experimental apparatus at Colorado Springs and Long Island built to test the transmission of electrical power without wires.

Anyone who studies Tesla, builds his coils, or wants to perfect the inventions that Tesla didn't have time to finish should have a copy of this book. The writings of Tesla himself should be the cornerstone of any Tesla library, and here is your chance to get your own copy of this now-rare book. Interesting reading. Historically important. Get a copy.

5 1/2 x 8 1/2 paperback 170 pages.
Cat. No. 4392



\$9.95

TESLA COIL DESIGN PROGRAM!

The Tesla Coil Designer
by Walt Noon

"The Tesla Coil Designer has been written specifically to allow anyone with even the simplest knowledge of electronics to be able to design their own Tesla coil..."

The program has been written so that each component... can be individually calculated..."

Fire up your PC and design a coil. Walt Noon, the mad scientist, will provide you with a quality design program that offers more sophisticated design features than programs offered at twice the price.

You 5 1/4 floppy and a small booklet which walks you through the design of a 200,000 volt Tesla coil. The program is no copy protected, and can be copied to your hard disk for execution. You'll need at least

A great program for the PC!

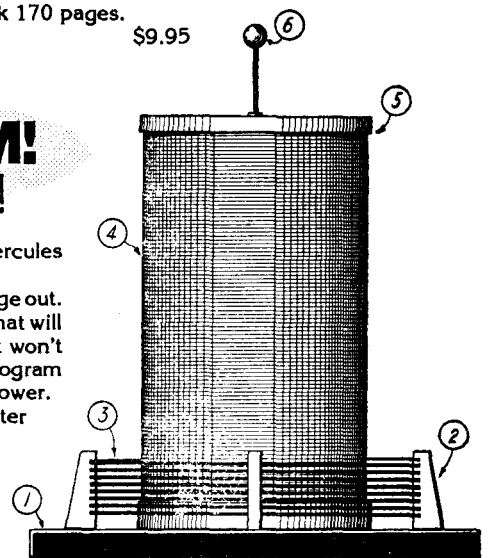
CGA graphics, although Walt includes a Hercules emulation program if you don't.

Just realize that garbage in gives garbage out. You can make the program design a coil that will deliver 25 million volts if you want, but it won't work if you build it. You've got to use the program to design coils of "reasonable" size and power. There are physical limits that no computer program is going to know about.

The price is right for this time saver. If you build coils, consider this carefully. one 5 1/4 floppy and one 5 1/2 x 8 1/2 booklet

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\$29.95



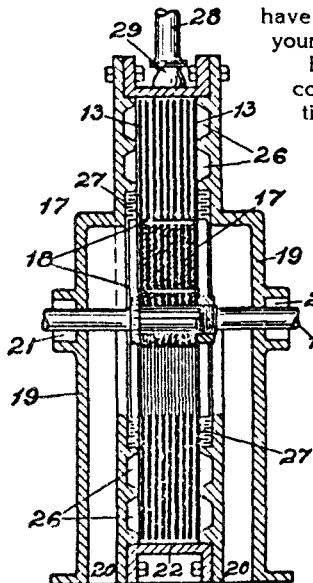
Boundary Layer Breakthrough THE BLADELESS TESLA TURBINE

compiled by C. R. "Jake" Possell

In 1909 Nikola Tesla applied for a patent on his bladeless steam turbine that could generate ten horsepower per pound of weight. Actually, the patent granted in 1913 was entitled "Fluid Propulsion" because the turbine could also be used as an efficient pump. Today, Tesla fanatics claim that this turbine is the solution to many of our energy problems, and that the modern world is ignoring one of the greatest

inventions ever. You'll have to decide for yourself.

Here you get a collection of articles on the tur-



Tesla's Turbine

bine/pump. Chapters include Tesla's Turbine, A Lighting Machine of Novel Principles, Boundary-Layer fire pump, Tesla's Hover Craft, Bladeless Jet En-

gines, and much more. Sources range from the *New York Herald Tribune* and *Motor World* to *Scientific American* and papers by Tesla himself.

You get many photos of applications, reproductions of the original patent plus related patents and much more. You'll get info on sources of plans should you want to build such a device.

This is an offbeat, quality book on an unusual topic. You hear a lot about Tesla's electrical inventions, but little about his mechanical. Get a copy of this. 5 1/2 x 8 1/2 paperback about 185 pages

Cat. no. 1307

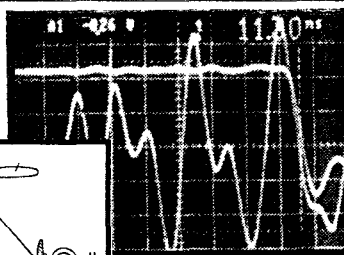
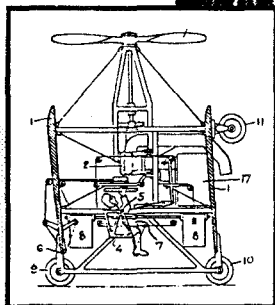
\$19.95

Proceedings of the 1988 International Tesla Symposium

edited by S. R. Elswick

Every year in Colorado, Tesla fans gather for a symposium to swap information. Here, in one convenient volume, are the papers presented at the 1988 meeting.

Chapters are collections of papers on a particular topic: Tesla history, Tesla coils, geophysical effects, electromagnetics, energy research, and gravitics. You get the Great AC/DC War, Tesla's Contributions to Electrotherapy, History of Laser Particle Beam Weapons, Tesla Coil - An RF Power Processing Tutorial for Engineers, Computer Simulation & Experimental Verification of Tesla High Voltage Machines, Earth-Ionosphere Cavity Magnetic Field Spectra in the 3-30 hz



1988 Tesla Symposium

heavily illustrated, you do get a number of drawings, circuits, charts, and there is plenty of math in places.

This is an unusual book, to say the least. It is a must-have for Tesla fanatics, anti-gravity people, perpetual motion people, and the fringe-science crowd in the general. I can't tell where the hard science ends and the speculation and alternate science theory sets in. So you know it's unusual! It's expensive, but worth having. Consider it carefully. 8 1/2 x 11 hardcover about 320 pages

Cat. no. 385

\$49.95

TESLA COIL

by George Trinkaus

Here's another Tesla coil book. It's a bit expensive for what you get, and much of it is a repeat, but there are some bits and pieces that I haven't seen.

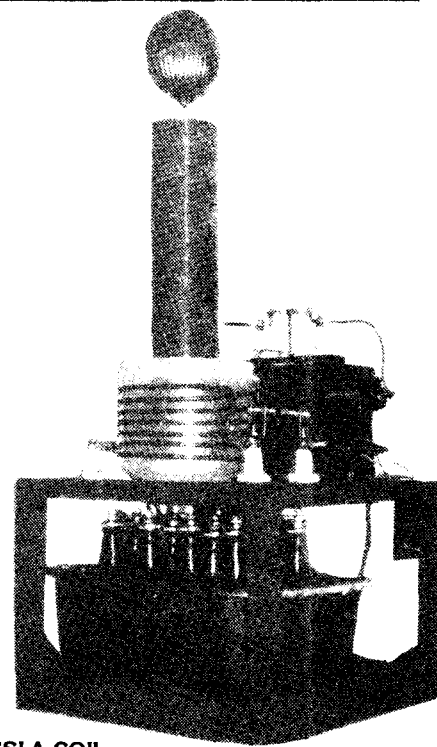
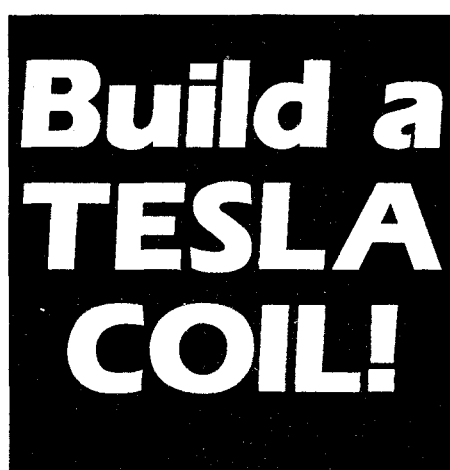
You get a brief overview of Tesla, his career and his coil. Then you get instructions on building a good sized coil using a neon transformer and a spark gap to drive the primary. The detail is not great but is probably adequate.

You get brief discussions and details on capacitors, glass-and-foil capacitors, oil capacitors, salt-water capacitors, series and rotary spark gaps, a schematic for a 6L6 vacuum tube driven coil, construction notes, hazards, Tesla lighting, ozone disinfectors, and magnifying transmitter. All this in 21 pages!

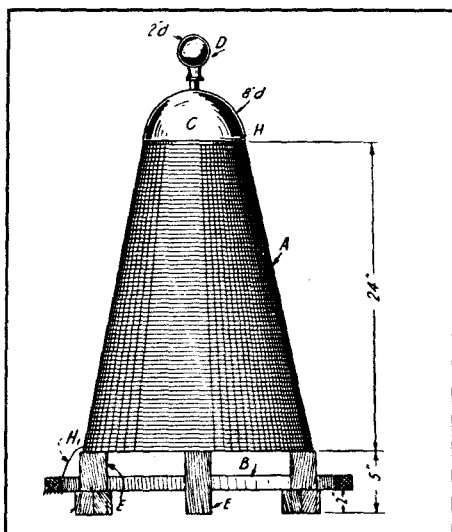
Obviously, the booklet does not go into great detail, but there are ideas and clues here that you might not have thought of yet that might be worth the price and then some. You'll have to decide. Consider it carefully. 7 x 8 1/2 booklet 21 pages

Cat. no. 741

\$4.95



Band, Demonstrating A Zero-point Energy Coherence, Phenomenon of Electric Charge Generation by Space Rotation, Studies on Rotation Leading to the "N" Machine, Recent Developments of Levitation, Maxwell's Lost Unified Field Theory, and ten more! Although not



CONTENTS

Collin's Radiophone Arc
Detector, Spark Gap, Hints & Tips
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Water Wheel Drives for Private Lighting Plants
Construction & Use of the Gold-Leaf Electro-
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Marvels of Modern Physics (Electricity & Medi-
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Vacuum Detector & How It Works
A Small Static Machine
Making Selenium Cells
Giant 48" Spark Coil
Rotary Spark Gaps
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Chromic Acid Battery
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Double Capacity Rotary Variable Condenser
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Use of High-Frequency Currents in Medical
Work
How & Why of Radio Apparatus - Spark Gaps
High Frequency Apparatus and Experiments
36" Spark Tesla Coil for Lecturers
Amateur and Experimental Radio Research
Tesla's Views on Electricity & War
Suggestions for Radio Research Work
Converting a Tuning Coil into a Cabinet Tuner
A Hand-Feed Arc for the Experimenter
X-Ray Tubes for High Frequency Coils
Selenium Cell Design & Construction
Home-Made Arc Search Light
A Simplified Variable Condenser
Constructing a 1/4 KW High Frequency Oudin
Coil
Construction of a Laboratory Vacuum Pump
Regarding Tesla & Oudin Coils
How I Telegraph Pictures
How to Use High Frequency Currents in the
Treatment of Disease

The Very
Best from
the

ELECTRICAL EXPERIMENTER

The Very Best From
THE ELECTRICAL
EXPERIMENTER 1916-1917

anthology by
Lindsay Publications Inc

You can go back to read the very best articles from one of the earliest hobbyist electronics magazines published. Gemsback's Electrical Experimenter was filled with basic information, ads for early equipment, and most importantly how-to projects designed to be built from the most primitive materials.

Readers learned how to build unusual crystal set receivers with unusual detectors, high power wireless sets, and all the equipment that went into their construction. Today, you buy electronic equipment, put batteries in it, and turn it on. Back then you built your batteries!

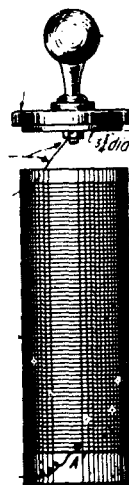
You'll find how-to articles on high voltage Tesla coils, induction coils, spark gap construction, batteries, detectors, water power systems, selenium cells for experimenting with primitive television systems, and more.

You get theoretical papers by MD's describing how new electrical equipment would revolutionize medicine. You get history on Fessenden and Tesla. You'll learn how to measure capacity, and much more.

You get the very best articles from this two year span, and by best we mean plans and information that is very difficult to find today. Many articles that cover the basics of electricity were omitted because you can find comparable material in modern magazines. Some plans were omitted because they were not unusual enough, such as motor and dynamo plans. You can find such plans in many old books.

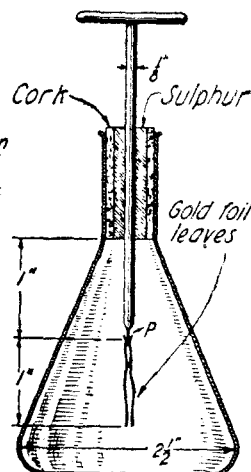
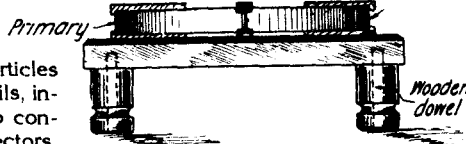
What you will find is solid, interesting and useful information. Be careful,

1916-1917

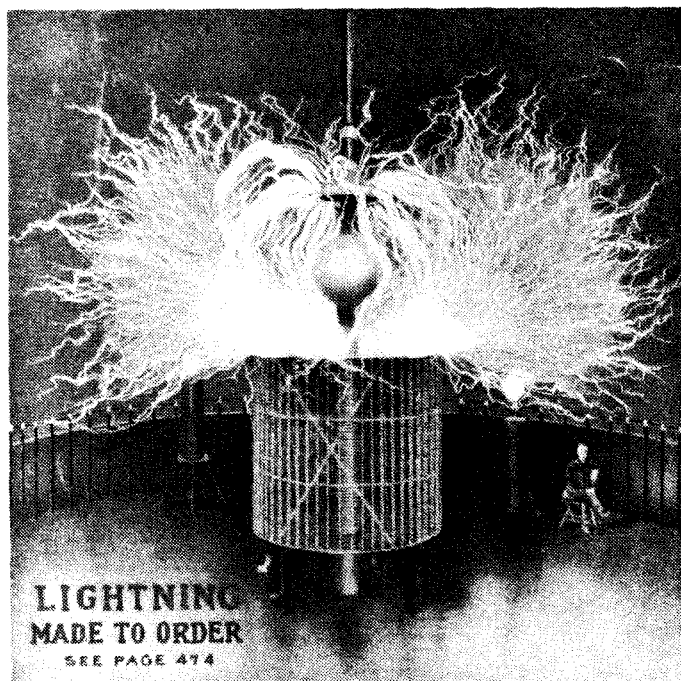


though! Some of this info is downright dangerous. You can get yourself electrocuted. You can give you and your neighbors cancer if you build and operate an X-Ray machine. Be very careful.

This is a great collection of rare material — something you should have in your reference library. Wall-to-wall illustrations! Interesting reading. Order a copy! 8 1/2 x 11 paperback 108 pages
Cat. no. 20137 \$9.95



You should know that most of the photographs in this book are not of the best quality. Poor originals, yellowed paper, oversized pages have combined to make the photographs "muddy". The drawings are very sharp, and most type is quite readable, but the photos leave something to be desired. All we can say is that we did the best job we could. See what you think.



Inventions, Researches & Writings of
NIKOLA TESLA

by Thomas Commerford Martin
reprinted by Lindsay Publications Inc

The greatest world's fair ever constructed was underway in Chicago in 1893. More electricity and more electric lights were used in the fair than in the entire city of Chicago. It was the electric age, and Edison was doing with commercial battle with Westinghouse and its star, Nikola Tesla.

In 1893, this volume, a comprehensive collection of Tesla's work to that point, was published. And although it is now quite rare, you can have a high quality reprint for a small fraction of what cost us to obtain an original copy.

Most people think of lightning generators when they think of Tesla, but that's a very narrow perspective. People should think of alternating current. Tesla created the power system used throughout the world today — one that operates at 50 and 60 cycles per second.

Tesla experimented with other frequencies, iron and air core transformers, as well as motors and generators. Tesla didn't just one day decide he was going to build his famous lightning bolt generator. It was but another step in a series of experiments that had begun years before. Here you get a complete record of this research up to 1893.

It's all here — the AC experiments and inventions that lead Tesla to experiment with ever higher voltages and frequencies, the neon tubes and fluorescent lights, unusual high frequency alternators and even magnet motors.

If you want to carry on Tesla's unusual research, you must walk in his footsteps. You must do your homework. Here in one volume is the early work that will help you get your mind in sync with his and perhaps suggest what he was thinking at the time, and give you ideas of where to take his experiments.

Every Tesla fan, every high voltage experimenter, and every electrical engineer should have a copy of this classic book. Just as much as Edison, Tesla created the world in which we live today. Now you can study the results of his research, attend his special exhibitions, and devour his lectures, with this single volume. Order a copy today! 5 1/2 x 8 1/2 paperback 496 pages
Cat. no. 4902 \$16.95

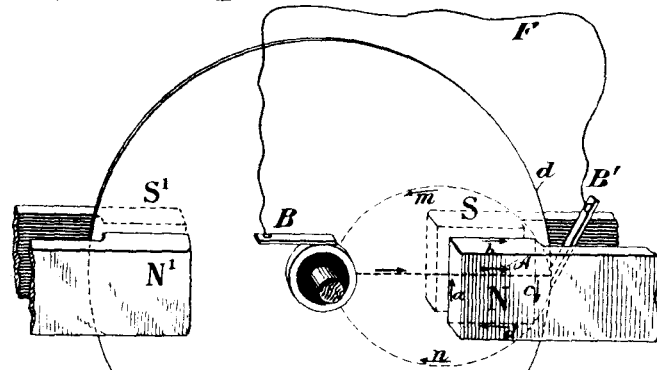
SPECIAL HARDCOVER EDITION

A small fraction of the print run has been beautifully hardcover bound for libraries, serious collectors and researchers. It is possible the hardcover edition may be unavailable for extended periods of time.

Cat. no. 4910 \$26.95

Inventions, Researches & Writings of NIKOLA TESLA

Incredible inventions! AC Power, High Voltage, High Frequency, Oil Condensers, even magnet motors!



**Rare 1893
Tesla book
now back in
print! All Tesla
work to that
date!**

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Part I — Polyphase Currents
Biographical and Introductory; A New System of Alternating Current Motors and Transformers; The Tesla Rotating Magnetic Field — Motors with Closed Conductors — Synchronizing Motors — Rotating Field Transformers; Modifications and Expansions of the Tesla Polyphase Systems; Utilizing Familiar Types of Generators of the Continuous Current Type; Method of Obtaining Desired Speed of Motor or Generator; Regulating for Rotary Current Motors; Single Circuit, Self-Starting Synchronizing Motors; Change from Double Current to Single Current Motors; Motor with "Current Lag" Artificially Secured; Another Method of Transformation from a Torque to A Synchronizing Motor; "Magnetic Lag" Motor; Method of Obtaining Difference of Phase by Magnetic Shielding; Type of Tesla Single-Phase Motor; Motors with Circuits of Different Resistance; Motor

with Equal Magnetic Energies in Field and Armature; Motors with Coinciding Maxima of Magnetic Effect in Armature and Field; Motor Based on the Difference of Phase in the Magnetization of the Inner and Outer Parts of an Iron Core; Another Type of Tesla Induction Motor; Combinations of Synchronizing Motor and Torque Motor; Motor with a Condenser in the Armature Circuit; Motor with Condenser in One of the Field Circuits; Tesla Polyphase Transformer; A Constant Current Transformer with Magnetic Shield Between Coils of Primary and Secondary.

Part II — Tesla Effects with High Frequency and High Potential Currents

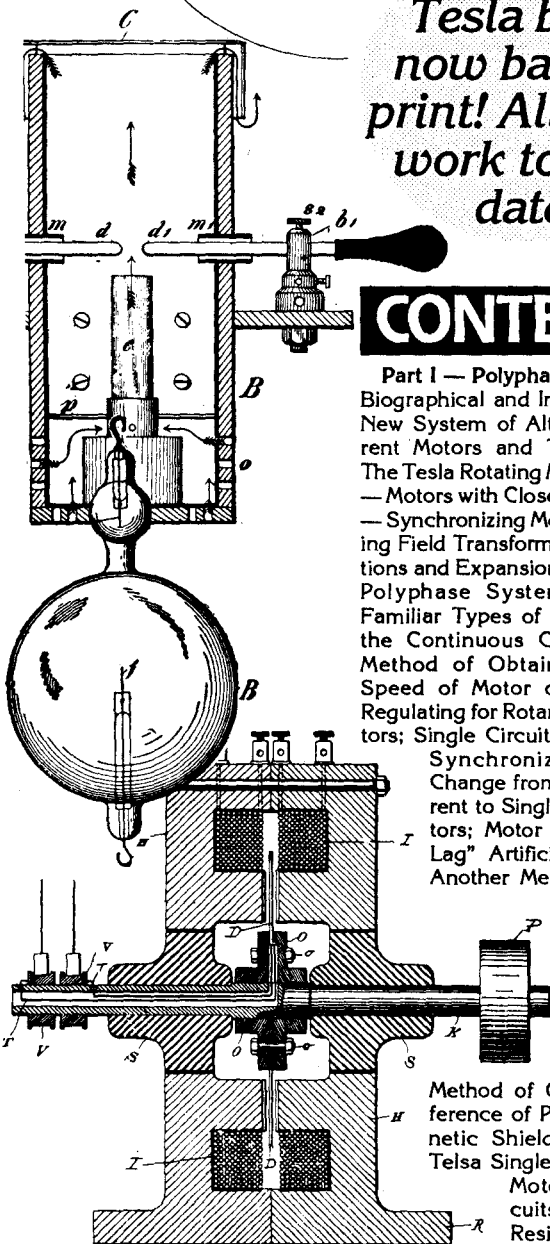
Introductory — The Scope of the Tesla Lectures; The New York Lecture. Experiments with Alternate Currents of Very High Frequency, and Their Application to Methods of Artificial Illumination, May 20, 1891; The London Lecture. Experiments with Alternate Currents of High Potential and High Frequency, February 3, 1892; The Philadelphia and St. Louis Lecture. On Light and Other High Frequency Phenomena, February and March, 1893; Tesla Alternating Current Generators for High Frequency; Alternate Current Electrostatic Induction Apparatus; "Massage" with Currents of High Frequency; Electric Discharge in Vacuum Tubes.

Part III — Miscellaneous Inventions and Writings

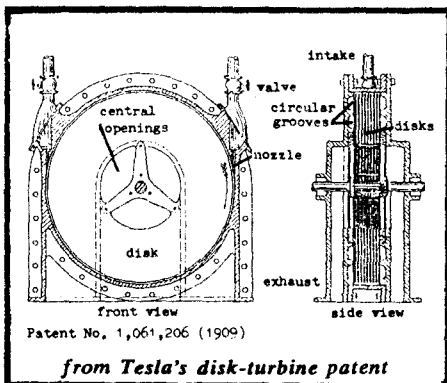
Method of Obtaining Direct from Alternating Currents; Condensers with Plates in Oil; Electrolytic Registering Meter; Thermo-Magnetic Motors and Pyro-Magnetic Generators; Anti-Sparking Dynamo Brush and Commutator; Auxiliary Brush Regulation of Direct Current Dynamos; Improvement in Dynamo and Motor Construction; Tesla Direct Current Arc Lighting System; Improvement in Unipolar Generators.

Part IV — Appendix on Early Phase Motors

and the Tesla Oscillators
Mr. Tesla's Personal Exhibit at the World's Fair; The Tesla Mechanical and Electrical Oscillators.



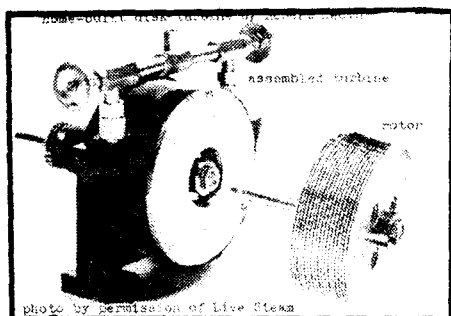
TESLA'S LOST Inventions!



from Tesla's disk-turbine patent

TESLA: The Lost Inventions
by George Trinkaus

"Here are the suppressed inventions of Nikola Tesla all in one place rendered in clear English and in 42 illustrations. Tesla was famous at the turn of the century for inventing the alternating-current system still in use today. But his later inventions, documented in some 30 U.S. patents between 1890 and 1921, have never been utilized as Tesla intended despite their obvious potential for advancing in fundamental ways the technology of modern civilization. Among these lost inventions: the disk-turbine rotary engine, the tesla-coil electric energy magnifier, high-frequency lighting systems, the magnifying transmitter, wireless power, and the free-energy receiver." —from the front cover.



Like Trinkaus's other Tesla book, the only major criticism that can be leveled here is that the chapters are too short. On the other hand, even if each topic were expanded into a full-blown book, you would probably find Tesla so interesting that your curiosity would still not be satisfied.

Interesting, unusual information, especially if you're just beginning your study of Tesla. Fairly priced. 8 1/2 x 7 booklet 34 pages
Cat. no. 748 \$5.95

HIGH FREQUENCY APPARATUS

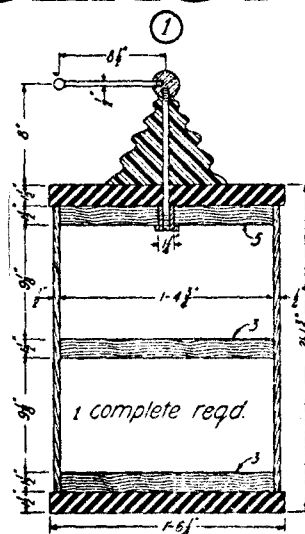
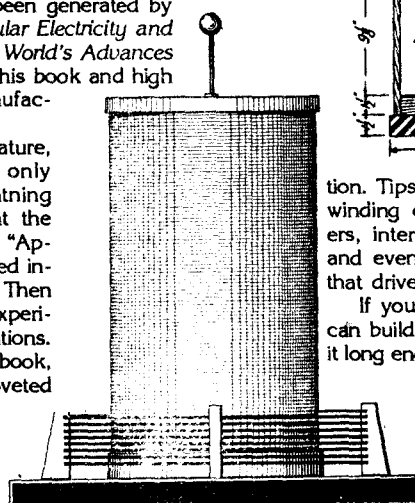
Classic High Voltage
Text is Back
in Print!

High Frequency Apparatus
by Thomas Stanley Curtis
reprinted by Lindsay Publications

By 1916 so much interest in induction, Tesla and Oudin coils had been generated by *Electrician & Mechanic*, *Popular Electricity* and *Modern Mechanics*, and *The World's Advances* magazines, that Curtis knew his book and high voltage equipment he manufactured would be a hit.

Because of their very nature, magazines could publish only brief articles on these lightning bolt generators. Curtis went the other extreme, and packed "Apparatus" with as much detailed information as he could find. Then he added suggestions for experiments and dozens of illustrations. The result is now a classic book, and original copies are so coveted that they're difficult to find.

You get wall-to-wall
how-to on coil construc-



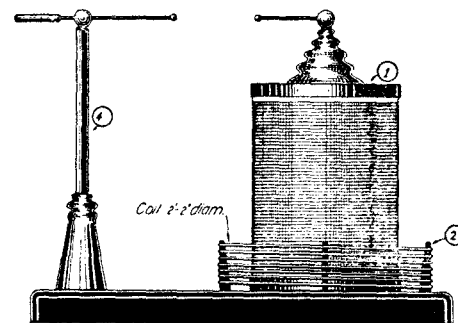
tion. Tips on calculating windings, winding coils, making transformers, interrupters and spark gaps, and even the power transformers that drive the spark gap.

If you want to die young, you can build an X-ray apparatus. (Use it long enough, and you and every-

one in your apartment building will glow in the dark! Build a grid and see for yourself if high frequency current

really does affect plant growth. Build yourself a large coil that produces 50" lightning bolts, give lectures, and make people think you are a genuine made scientist. (Bring your mother-in-law along. They might mistake her for Frankenstein....)

Great book. And absolutely **MUST HAVE** book for the Tesla coil experimenters. Get a copy for your high-voltage library. Quality. Order a copy today. 5 1/2 x 8 1/2 paper 247 pages well illustrated
Cat. no. 20030 \$11.95



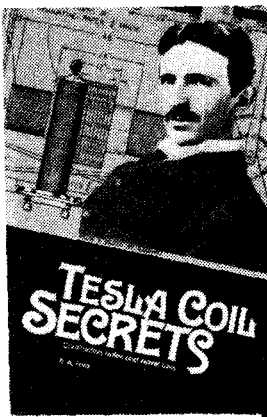
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Contents

- 1 Alternating Current at Low and High Frequencies
- 2 How the High Frequency Current is Produced
- 3 The High Potential Transformer or Induction Coil
- 4 The Oscillation Transformer
- 5 The Spark Gap
- 6 Oscillation Transformers
- 7 Induction Coil Outfits Operated on Battery Current
- 8 Kicking Coil Apparatus
- 9 One-Half Killowatt Transformer Outfit
- 10 Quenched Gap Apparatus
- 11 Physicians' Portable Apparatus
- 12 Physicians' Office Equipment
- 13 Hot Wire Meter Construction
- 14 Notes for the Beginner in Electro-Therapeutics
- 15 Plant Culture with High Tension Current
- 16 High Frequency Plant Culture
- 17 A Foreword on the Construction of Electrical Apparatus for the Stage
- 18 Construction of Large High Frequency Apparatus
- 19 Large Tesla and Oudin Coils for the Stage
- 20 Construction of a Welding Transformer
- 21 Hints for the Electrical Entertainer
- Appendix Parts and Materials - How Much They Cost and Where to Get Them

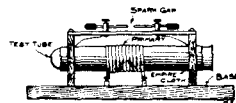
TESLA COIL SECRETS!



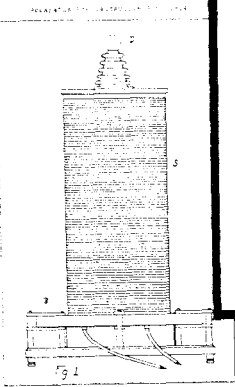
Private Notebook of a Tesla Coil Builder

A MINIATURE TESLA COIL

Most owners of small induction coils have at some time or other wished that a Tesla coil giving results could be built to run on their apparatus. This article describes a Tesla coil made to work with a one-quarter inch spark coil.



Make a base 8x8x1/2 inches, and two uprights two inches square and one-quarter inch thick. Now get a test tube 5 1/4 inches long, inside diameter three-quarters inch. A cardboard tube of the same dimensions will do. Through each of the uprights drill a hole large enough to let the test tube slip through. Starting one-half inch from the end of the tube, wind on about 135 turns of No. 31 single silk copper wire, spacing the turns 1/32



Special Transformer for Producing Current for Electrical Single Act.

TESLA COIL SECRETS

by R. A. Ford

Be the first on your block to blast your neighborhood with high voltage! Shock the socks off your friends and relatives! Zap those pesky cats digging in the garbage can! Make people think you really are building a Frankenstein monster in your basement!

A Tesla coil is a resonant, air-core, high-voltage transformer developed by Nikola Tesla at the turn of the century to generate lightning bolts and to investigate the wireless transmission of electrical power.

Now you can dig through the private scrapbooks of an avid Tesla researcher who has built several coils. You can study his collection of articles, clippings, and notes that took years to assemble. You'll see all the interesting hints, plans, and wiring diagrams gleaned from early magazines that ceased publication decades ago along with formulas, notes, and observations he believes are important for building powerful coils. Many of the old articles are so detailed that you can probably use them to build a powerful experimental coil. There are notes on one machine the could kick out five foot lightning bolts!

If you're really into Tesla coils, you may have seen a few of these clippings already. But I'll bet there are others you haven't seen. You'll get info on rotary spark gaps, anti-kickback

devices, Leyden jar capacitor construction, conical Tesla coils, Oudin coils, and suggestions on research into wireless power transmission, plant growth stimulation, medical uses, and more.

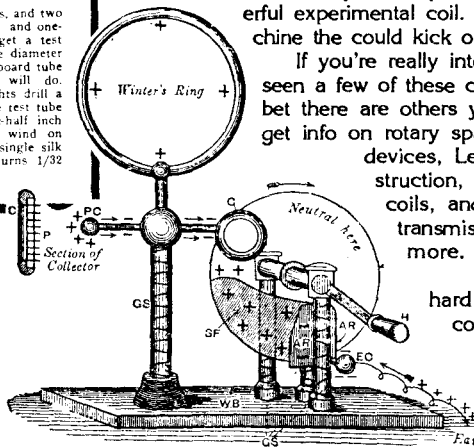
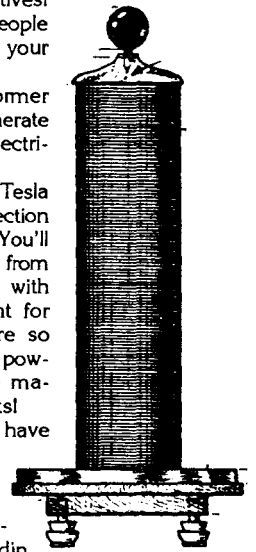
Many of the reprinted articles are fuzzy and a few hard to read. Most have been enlarged to bring out the construction details, and have been reprinted in their entirety. The difficult searching has been done. You can spend your time building and experimenting.

Be warned! You'll be working with high-voltage high-frequency devices from another era. Tesla coils can be very dangerous. But maybe you can be the one to rediscover the secrets Tesla didn't have time to pursue or reveal.

Rare info! Too bad the book isn't ten times bigger. Get a copy for the reference library if for no other reason. Interesting reading. Recommended!

5 1/2 x 8 1/2 paperback 74 pages
Cat. no. 4317

\$6.95



WHO WAS NIKOLA TESLA?

TESLA: MAN OUT OF TIME

by Margaret Cheney

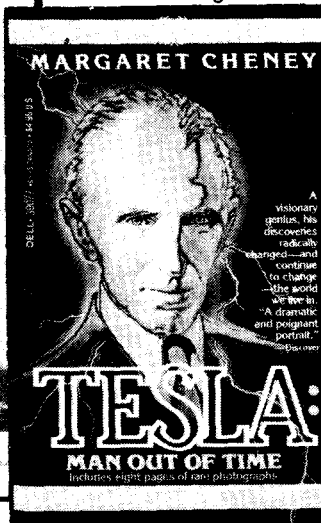
"Flamboyant, eccentric, almost supernaturally gifted, had he been born today he would still be ahead of his time. Called a madman by some, a genius by others, and an enigma by nearly everyone, Nikola Tesla was perhaps the greatest inventor the world has ever known..."

"It was Tesla who harnessed the alternating electrical current that we use today... Tesla who actually invented radio... Tesla who invented fluorescent lighting and the incredible bladeless turbine. He introduced us to the fundamentals of robotics and computer and missile science, which continued to create and transform the future..."

There are many books about Tesla, some of them are garbage written by groupies who worship Tesla as a god. Here's a great factual biography that has gotten great reviews — the story of a wizard who was Edison's enemy, Mark Twain's friend, and J. P. Morgan's client. This is the real story. Excellent book at a reasonable price. Order a copy. 310 pages "mass" paperback a few photos

Cat. no. 717

\$5.95



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Unusual Science Beliefs Attacked...

MARTIN GARDNER

Fads & Fallacies IN THE NAME OF SCIENCE

THE CURIOUS THEORIES OF MODERN
PSEUDOSCIENTISTS AND THE STRANGE, AMUSING
AND ALARMING CULTS THAT SURROUND THEM.
A STUDY IN HUMAN GULLIBILITY

L. RON HUBBARD PSYCHICS MACHINES FLYING SAUCERS
WILHELM REICH DR. W. H. BATES ALFRED KORZYBSKI
ATLANTIS ECCENTRIC SEXUAL THEORIES BRIDEY MURPHY

FADS & FALLACIES

in the Name of Science
by Martin Gardner

If you find "Fringe Science" impossible to believe, you'll find this book right down your alley. Gardner presents his views on "the curious theories of modern pseudoscientists and the strange, amusing and alarming cults that surround them. A study in human gullibility."

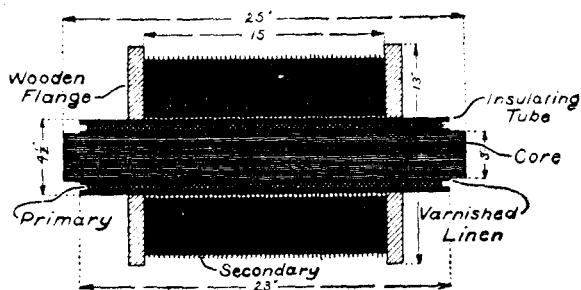
Gardner tears apart Symmes and his hollow earth theory, Velikovsky and wandering planets, the multiple moon theories of Horbiger & Bellamy, Charles Fort and the Fortean society, dowsing and other strange methods of finding natural resources, naturopathy, iridagnosis, zone therapy, food fads, orgone sex energy by William Reich, L. Ron Hubbard and dianetics, Koryzbski and his General Semantics, Atlantis, flying saucers, and Bridey Murphy.

Gardner shoots them down, and many of them deserve it. But whether you agree with Gardner or not is immaterial. Here, you'll read about many strange ideas for the first time. You can read Gardner's point of view and then do your own research and decide whether you want to agree with him. What I especially like is the appendix that lists many unusual articles and books along with fascinating footnotes.

In other words, Gardner may attack something you really believe in, but in doing so might very well provide you with new directions for your own investigations.

No matter what side of the fence you're on, you'll enjoy this. Wall-to-wall unusual material. A lot of interesting book for the money. You can't afford NOT to have a copy. 5 1/2 x 8 1/2 paperback 363 pages
Cat. no. 737

\$6.95



High Power Wireless Equipment!

HIGH POWER WIRELESS EQUIPMENT

by Alfred Morgan

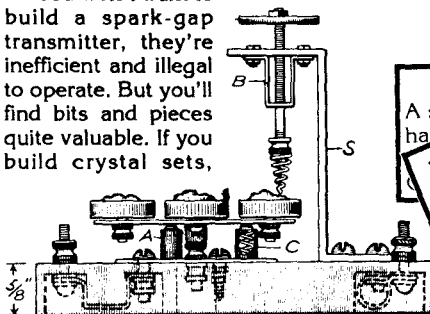
reprinted from

Popular Electricity Magazine 1910-11

If you wanted to try your hand at the newest 1910 electrical craze of transmitting telegraphy without wires, you had to build your equipment. The few pieces of equipment available commercially would probably have been way beyond your pocket book.

Here, in a series of fifteen installments, Alfred Morgan provided his readers with complete, detailed, dimensioned directions for building everything from the key to the aerial, from the induction coil and spark gap, to the helical transmitting coils. As a slice of early radio history this is fascinating reading.

You won't want to build a spark-gap transmitter, they're inefficient and illegal to operate. But you'll find bits and pieces quite valuable. If you build crystal sets,



you'll find the detectors very valuable.

If you like to build high voltage equipment, you'll find the induction coil, spark gaps, condenser and other plans useful. Early transmitters were essentially Tesla coils turned off and on with a key. A later chapter actually describes Tesla and the work he did, how to build one of his coils, how to use his equipment in wireless telegraphy.

And you'll find a chapter loaded with hints and kinks on everything from building condensers and using a coherer detector to how enamel wire and make a variometer.

This is all practical hands-on early radio and high-voltage electricity reprinted from the original hard-to-

CONTENTS:

- Aerials
- Aerial Switch & Induction Coil
- Induction Coil Secondary; Key
- Independent Adjustable Interrupter
- Oscillation Condenser
- Transmitting Helix
- Hot Wire Ammeter
- Two KW Closed Core Transformer
- Two KW Transformer Cont'd
- Detectors
- Detectors Cont'd
- Potentiometer; Fixed Condenser
- Loose Coupled Tuning Coil
- Variable Condenser
- Directions for Operating
- Tesla and His Wireless Age
- Construction of Tesla High-Frequency Apparatus
- High Frequency Apparatus for a Wireless Set
- Hints and Kinks

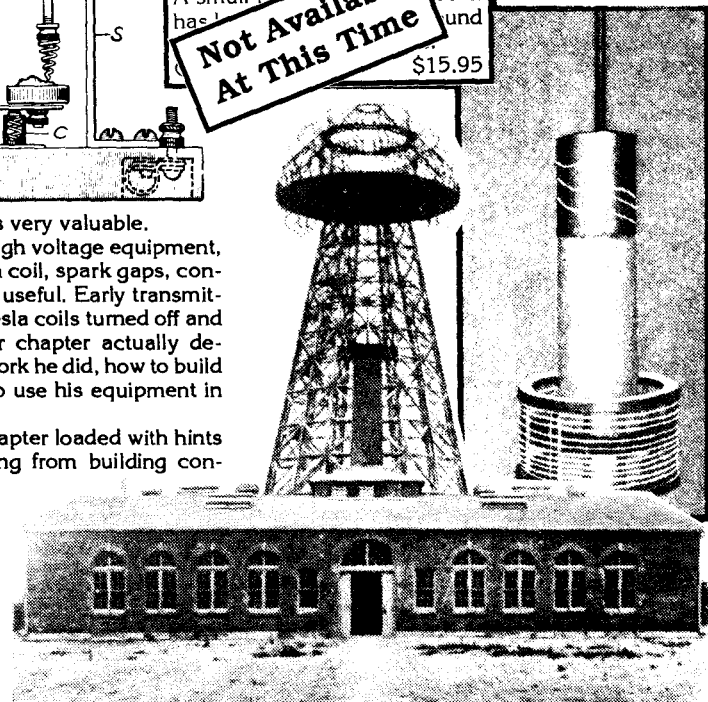
Tesla Equipment, Crystal Detectors, Rare Radio Equipment from 1910-11! Great How-To!

find magazines. Think about the possibilities. It might be fun to build an old wireless station just to show people today how it was done before semiconductors. No matter what your angle or interest is, you'll find this detailed how-to to be fascinating. Excellent rare, early information! Order a copy of this. It's worth having.

5 1/2 x 8 1/2 paperback 99 pages
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A small no. has
**Not Available
At This Time**
\$15.95



Plans & Instructions to Build the "MINI" TESLA ELECTRIC SPARK COIL

by John F. Nuyen

It's a small booklet, typewritten, and is not all that professionally produced. After all, Nuyen is not a slick author/publisher. He's a high voltage experimenter. In other words, this is a set of plans for a working Tesla coil written by something who has done it. It works. And you'll find a photo of the coil on the cover.

This coil uses a primary of 8 gauge wire driven by a Model-T hum coil which can be purchased from some auto supply houses (suggested sources provided.) The primary consists of 34 gauge wire wound around a 16" length of PVC tubing.

I must warn you that the how-to is not extremely detailed, but it's still quite good. Any Tesla coil experimenter would do well to have these plans.

This is a home-grown coil and a home-grown publication that you won't find in any bookstore. Look it over carefully. Brief, but fairly priced. Buy a copy and start building. 5 1/2 x 8 1/2 booklet 16 pages
Cat. no. 374 \$4.00

Plans & Instructions to Build the HIGH FREQUENCY ELECTRIC COIL

by John F. Nuyen

This is actually a Oudin coil (very similar to the Tesla coil) that like the coil above is driven by a Model-T hum coil and an 8 gauge primary. The secondary is wound with 34 gauge magnet wire around paper tubes.

You'll find this is brief, typewritten, and not

High Voltage Plans!

"slick" in appearance, but is written by someone who has done it. If you're into Tesla coils, you should have this. Order a copy. 5 1/2 x 8 1/2 booklet 16 pages
Cat. no. 375 \$4.00

Plans & Instructions to Build the TRAVELING ELECTRIC ARC (JACOB'S LADDER)

by John F. Nuyen

You've seen them — those two wires sticking up in the air in a "V" shape with a spark that starts at the bottom and slowly travels upward. You've seen them in the "mad scientist" movies. (I sometime think my mother-in-law uses one to see while she puts on her makeup!)

The ladder is easy to build and quickly goes together. It makes an impressive science fair project, although I'm not sure exactly what sci-

entific use there is for it. Maybe you can use it to terrify your neighbors, or the IRS agent when he calls.

Another typewritten booklet by someone who has done it. Get a copy — for your reference library, if nothing else. 5 1/2 x 8 1/2 booklet 16 pages
Cat. no. 376 \$4.00

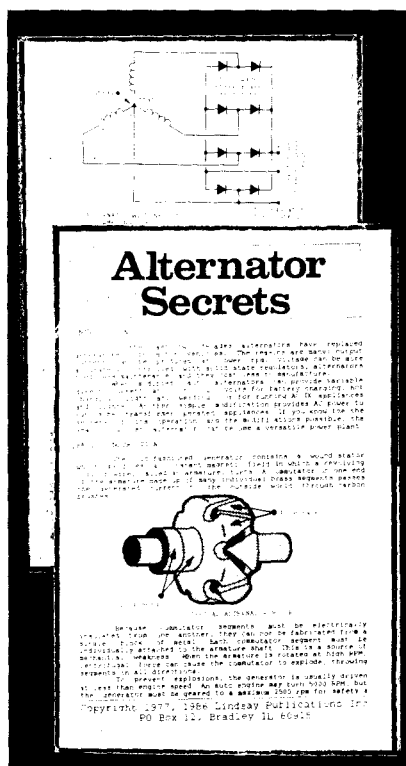
ALTERNATOR SECRETS

If you know the secrets of modification, you can get large amounts of power from a common auto alternator. You can build a portable powerplant driven by a gasoline engine to run brush-type power tools, lights, and AC-DC appliances at remote locations. You can hot-charge storage batteries, or even do light arc welding. Operation of the regulator is explained so that you can build a custom regulator, if needed, to provide regulated output voltages other than 12.

Learn how you can make almost an ordinary induction motor (like an old washing machine motor) put out 120 volts at 60 cycles without rewinding or internal rewiring. These secrets are worth the price of the booklet alone.

We've jammed a ton of information into 16 pages with small type to keep printing costs down so that we can keep the retail price the same as the old edition. Valuable, rare info! Get a copy. 5 1/2 x 8 1/2 booklet 16 pages
Cat. No. 80 \$3.00

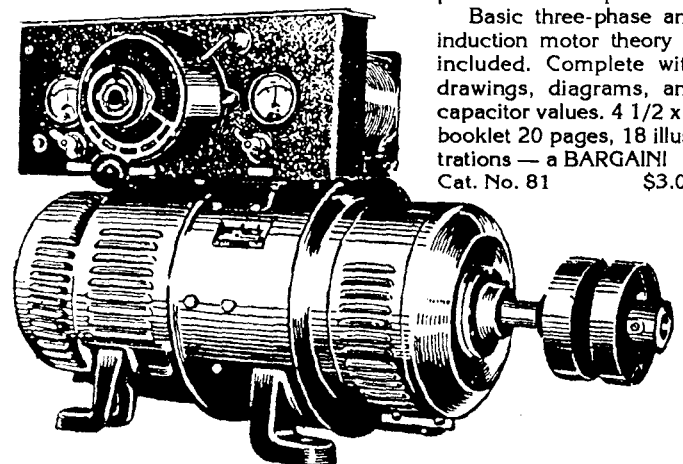
Power from Alternators!

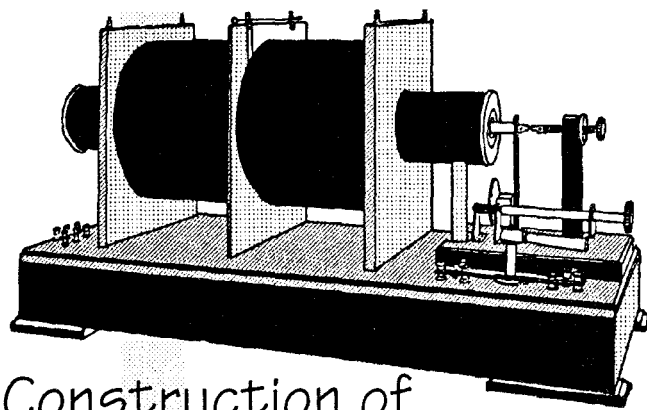


Run Three Phase Motors on Single Phase Power

Yes! You can run three-phase motors on single-phase power using any one of three excellent methods. First, lathes, drill presses, and other machine tool motors can be run with the capacitor method. Second, the autotransformer method (a technique you should buy rather than build) is useful for motors running under continuous full load. And finally you can run a whole shop full of three-phase motors from a single, easy-to-build dynamic converter! No rewinding is necessary. These methods are good to at least 150 hp and 220 volts! Low starting currents and excellent power factor are possible.

Basic three-phase and induction motor theory is included. Complete with drawings, diagrams, and capacitor values. 4 1/2 x 7 booklet 20 pages, 18 illustrations — a BARGAIN!
Cat. No. 81 \$3.00





Construction of INDUCTION COILS

The Construction of Large Induction Coils
A Workshop Manual

by A. T. Hare

reprinted by Lindsay Publications

Induction coils often don't get their fair shake among the high voltage equipment builders. Tesla coils are the rage. They can generate far greater voltage, but not much power. A well-built induction coil can knock your socks off with voltage and deliver power to boot.

Tesla coils are essentially air-core, high-frequency, resonant transformers. Induction coils are iron core transformers that run at a lower frequency with little thought being given to resonance. But they sure do work! They've been firing automotive spark plugs for decades.

You can build a big coil! One with a core 18" long that is almost 1 3/4" in diameter and weighs almost eight pounds. The secondary is made up of over 79,000 turns of very fine wire weighing 19 pounds and being almost 17 miles in length! This is the kind of machine you see illustrated in those bizarre turn-of-the-century medical texts!

Chapters include: the core, the primary coil, the main insulating tube, the condenser, the commutator, the break, the secondary coil, the winding, mounting the discs, outer insulation, covering and finishing, hand breaks, electrolytic breaks and more.

You get 35 drawings showing everything from the general layout of components to the procedure of applying insulation to the main tube. You'll learn how to build the capacitor and how to treat it to increase its capacity. You'll learn how to build and adjust

the break (the vibrating contacts that drive the primary). You'll see how to build a unique machine to coat wire with paraffin to improve its insulating qualities. And more!

Even if you don't intend to build something quite this big (or quite this small) this is still a book worth having. The lessons taught here can be applied to other projects. This is great 1900 how-to!

If you build this monster and fire it up, just let me know so that I don't call the fire department by mistake! And if you try to hook it up to an X-Ray tube, I'm leaving the country! Excellent book. Rare how-to! A "must have" for all apprentice mad scientists. Build one of these machines, and scare the hell out of everyone! 5 1/2 x 8 1/2 paperback 155 pages

Cat. no. 20897

\$9.95

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NIKOLA TESLA

On His Work With Alternating Currents and
Their Application to Wireless Telegraphy,
Telephony, and Transmission of Power

Nikola Tesla on His Work - an Extended Interview
edited by Leland I. Anderson

From the preface: "The surfacing of the transcript for this pre-hearing interview with Nikola Tesla by his legal counsel in 1916 resulted from an intensive search in archives of legal firms, some now defunct and other later acquired by contemporary interests. The interview was precipitated by numerous pending court cases as fledgling radio industry entered a period of fierce competition. Tesla's counsel believed the interview necessary not only in order to prepare for the pressing of his own claims against the Marconi Company, but also to protect his own patent interests when called to give expert-witness testimony in the upcoming litigation foray pitting a plethora of new communication companies and their captive radio pioneers as adversaries.

The text of this interview was, of course, never intended for publication. Counsel, concerned primarily with protection of Tesla's patent interests, ask questions almost exclusively relating to the priority of his patents and their application...

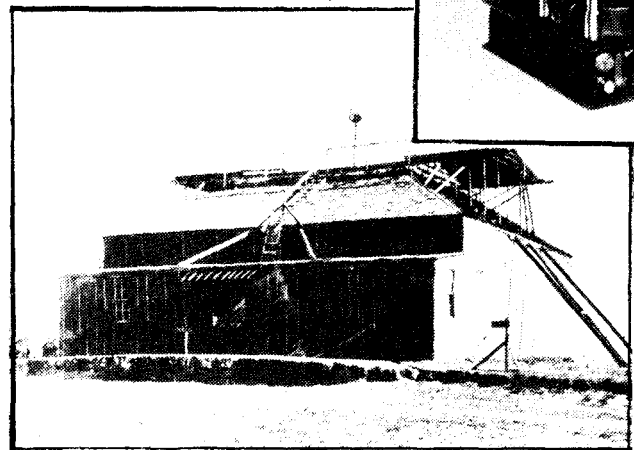
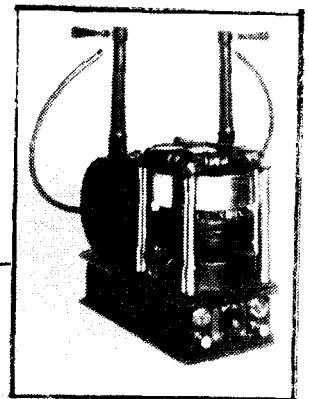
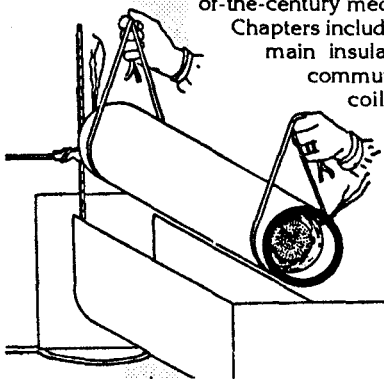
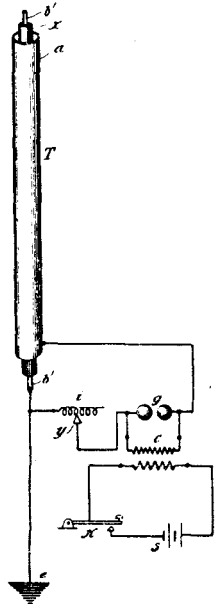
Most of the photographs accompanying this interview are in good condition, but those of schematics and mechanical drawings have suffered some decay with time..."

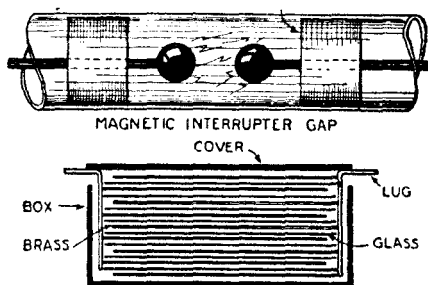
Chapters include high frequency alternators, experiments with wireless telegraphy and telephony, mechanical and electrical oscillations, damped waves, continuous waves, Colorado experiments, theory and technique of energy transmission, Long Island plant, arrangements for receiving, clarification of selected remarks, and even a description of the Long Island plant and inventory of the installation as reported in 1922 foreclosure appeal proceedings.

This is unusual, and apparently newly discovered, information about Tesla and his inventions in his own works. This is an expensive book, but well done and quite interesting. The Tesla buff will consider it a necessity. You get countless drawings and photos of Tesla coils, dynamos, condensers, his experimental plants and more. A lot of the illustrations you've seen before, but you'll no doubt discover new ones. Excellent book worth having. It's Tesla on Tesla. A cut above the rest. Get a copy. 8 1/2 x 11 paperback 237 pages
Cat. no. 392

\$40.00

NEW!





MECHANICS NOTEBOOK 20

Old Magazine Plans

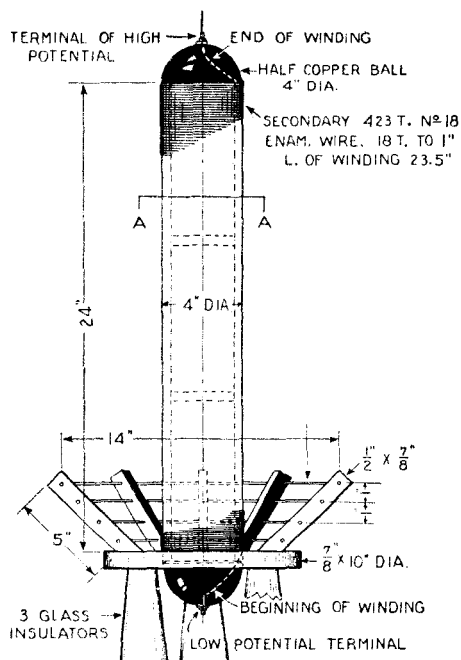
reprinted by Lindsay Publications

Discover unusual construction plans from rare vintage magazines

(1918 through 1926) such as "Everyday Engineering Magazine", "Practical Electrics" and others. Although most of what you find here is for the machine shop fanatic, you will find Willis L. Nye's complete article "A Practical Tesla Coil" exactly as it was published in the February 1926 issue of "The Experimenter". And you get plans for a electric arc crucible furnace that can easily melt steel.

Unusual Plans!

Other plans include: a guide that turns a common file into a remarkably good milling machine, two different sets of plans for building unusually sensitive laboratory chemical balances, a small surface grinder having a 6"x6" table, and a universal lathe attachment that the author claims is good for surface grinding, indexing, shaping, planing and milling. You can even build a one-lung one-horsepower overhead valve gas engine from scratch.



Finding the original magazines is almost impossible, but you can have some of the best articles we've stumbled across yet. Any one of the plans is worth the cost of the entire reprint. Order a copy today! 8 1/2 x 11 booklet 23 pages

Cat. no. 848

\$5.95

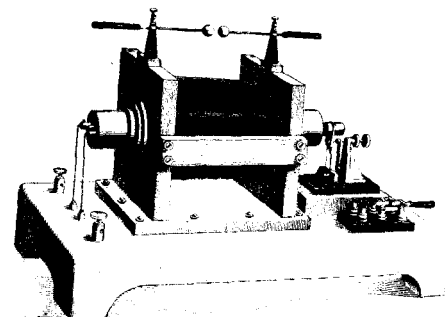
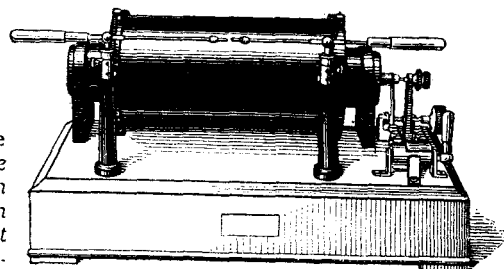
The Design & Construction of INDUCTION COILS

by A. Frederick Collins

Inside the cover of this 1908 classic is the author's statement: "For over fifty years the induction coil has held a preeminent place in the experimental laboratory for the production of high potential [high voltage] currents, but it did not become a commercial piece of apparatus until Roentgen announced his discovery of the X-rays in 1890..."

The art of coil making has been developed to a remarkable degree, [but] the actual processes of construction... have not been hitherto available....

The present work treats of eight different sizes of coils, varying from one giving 1/2-inch sparks to a large one giving 12-inch sparks. These various sized coils are included in three specific designs, and I have tried to tell in easily comprehensible language each process in sequence, together with the dimensions of each part down to the smallest screw....

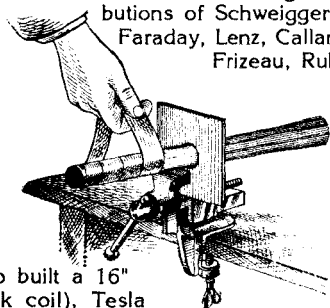


Design and Construction of INDUCTION COILS

Much of the matter in this book has never been published before, as, for instance the vacuum drying and impregnating processes, the making of adjustable mica condensers, the construction of interlocking reversing switches, the set of complete wiring diagrams, etc...."

Here you get one of the best books I've ever seen on their construction.

The first chapter starts out with the history of the coil, describing the contributions of Schweigger, Davy, Faraday, Lenz, Callan, Neef, Frizeau, Ruhmkorff



(who built a 16" spark coil), Tesla (and his mercury turbine interrupter), and others.

The other nineteen chapters delve into the theory of the coil and the action of each of its components, design of spark coil cores, choosing interrupters, details of condensor design and size, and more. Wire is discussed along with its cutting, straightening, annealing, the making of the paper tube, bundling and taping wires for large cores, and more.

Detailed discussions reveal the advantages of silk versus cotton-covered magnet wire, mounting the spool in the lathe, winding the primary, making a winding jig, winding the primary by hand, insulating the primary, the intricacies of winding the high-voltage second-

dary including details of a special winding machine, the impregnation of insulation waxes, the winding of helical secondaries, construction of aperture insulating rings, and more.

You'll learn how to dip the coil and bake it, build a vacuum apparatus to impregnate the apparatus, to dry the insulation, machine the parts for a simple spring interrupter, assemble the parts, mount the finished device, and more.

1908 Classic!

You'll learn about making tinfoil and paper condensers, adjustable mica condensers, reversing switches, and much more.

You get wiring diagrams for various coils, final assembly details, sources of direct current including dry cells, plunge batteries, chloride accumulators, and more.

This is a really a great book. You get more useful data in one place on building coils than you'll usually find in a dozen other books. Tesla coils are fun and fascinating, but so is the induction coil. Build one. Experiment. Have fun.

Show your friends. Brag about it. Get a copy of this! Highly recommended! 5 1/2 x 8 1/2 paperback 272 pages - well illustrated

Cat. no. 20404

\$12.95

SPECIAL HARDCOVER EDITION

A fraction of the print run has been cloth bound for collectors and libraries. This may edition may from time-to-time be out of stock for long periods of time.

Cat. no. 20447

\$19.95

How to Build a 40,000 Volt Induction Coil

How to Build a
40,000 VOLT INDUCTION COIL
by Walt Noon

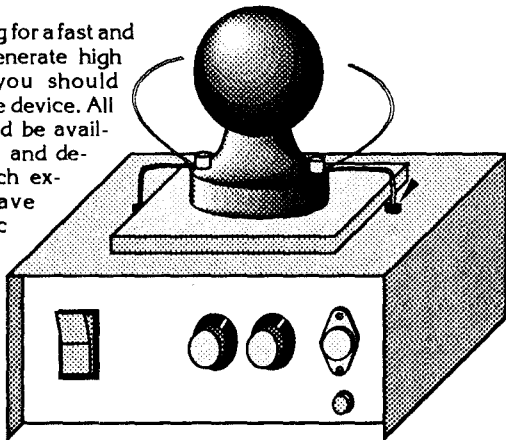
Are you looking for a fast and simple way to generate high voltage? Then you should build this nifty little device. All of the parts should be available in your area, and depending how much experience you have building electronic equipment, you should be able to bolt it together in a few hours.

As you already know, the ignition coil in your automobile is the modern equivalent of an old time induction coil. It is nothing more than a transformer that converts low voltage into very high voltage. The points in your automobile replace the old fashioned spark gap. Every time the points open, a pulse of DC current hits the coil like a hammer hits a bell. The ignition coil "rings" like a bell and produces a burst of high voltage. If you "hit" the coil fast enough, the ringing seems to be continuous.

Walt Noon's circuit here replaces the spark gap and the points with a low cost solid state circuit. The circuit takes 110 VAC out of your wall and converts it into a string of DC pulses. The pulses are sent to the terminals of an ignition coil that you can purchase at your local discount store. Off the high voltage terminal comes a solid 40,000 volts that can be used for a variety of experiments including plasma globes and Kirlian photography.

The circuit, based on a 555 timer integrated circuit, provides pulses with adjustable power and frequency. This allows you to easily tune the pulses to the natural resonant frequency of the coil which will significantly increase the output voltage.

You get drawings of the unit, parts list, circuit diagram, photos and assembly instructions for the coil. You are expected to have at least some experience building modern electronic



equipment with perf board. You get hints, tips and suggestions on where and how to make circuit modifications.

Probably best of all, Walt includes eight different experiments plus extensive details on Kirlian photography. He'll show you how to modify an inexpensive 35mm camera to take these unusual photographs in color and black and white. You also get six Kirlian photographs taken with the equipment he shows you how to build.

If you want to try your hand at high voltage experiments, this might be just the way for you to "cut your teeth", and it's something you'll be proud to show your friends. And it's a good way to literally shock the pants off them! Get a copy of this. It's unusual. It's well written. And it's inexpensive. You'll like it. 5 1/2 x 8 1/2 booklet 24 pages

Cat. no. 844

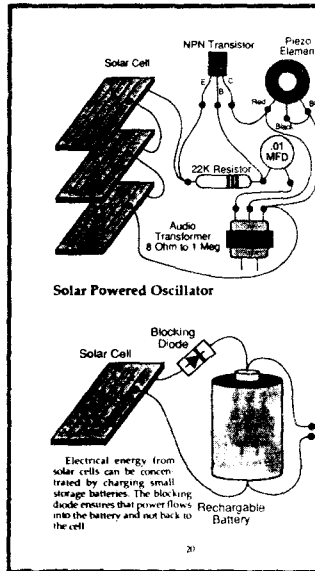
\$4.95



How to Build a
SOLAR CELL That Really Works
by Walt Noon

Yes! You CAN build a solar cell that converts sunshine into electricity. And it's really quite easy.

Modern high efficiency solar cells based on silicon crystals are difficult and dangerous to manufacture. You would need exceptionally expensive equipment just to perform the most basic experiments. But fortunately there is another method.



Walt Noon will show you how to quickly and inexpensively build a copper oxide photo cell. Admittedly its overall efficiency doesn't come close to modern silicon cells, but neither does the cost. You can crank out cells for pennies. Connect many cells in parallel and series, and you can generate surprising amounts of power.

The process requires only simple tools. The chemicals, like all chemicals, can be dangerous if mishandled, but the worst is probably nitric acid which is used to thoroughly clean the copper.

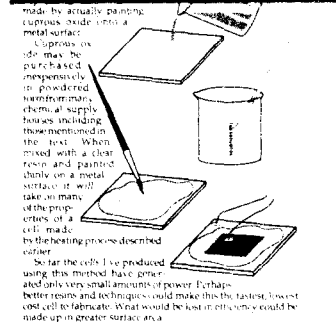
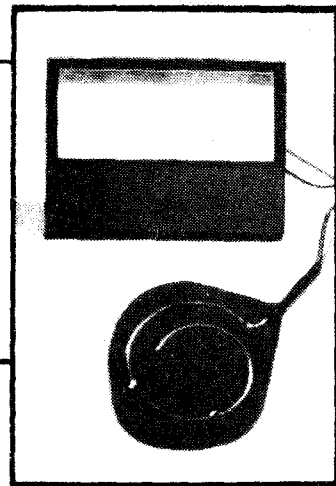
He'll show you to make a working cell, test it, troubleshoot it if necessary, and even give you ideas on an experimental painted cell that he's working on. In addition, he'll give you schematics of test circuits, sample applications, and interesting projects that he's tried. You'll also get names and addresses of suppliers.

That author is not a professional, but he has safely built and used these solar cells, and he's willing to show you how its done. You get a 24 page booklet with many drawings, schematics and photographs that describes the relatively simple process in detail.

Build solar cells! Perhaps you can make some improvement in the process that will improve efficiency. Build electronic equipment. Charge batteries. Build a great science fair project. No matter what your objective, you'll find this to be a fascinating project worth trying. Rare information! Order a copy of this inexpensive booklet today. 5 1/2 x 8 1/2 booklet 22 page

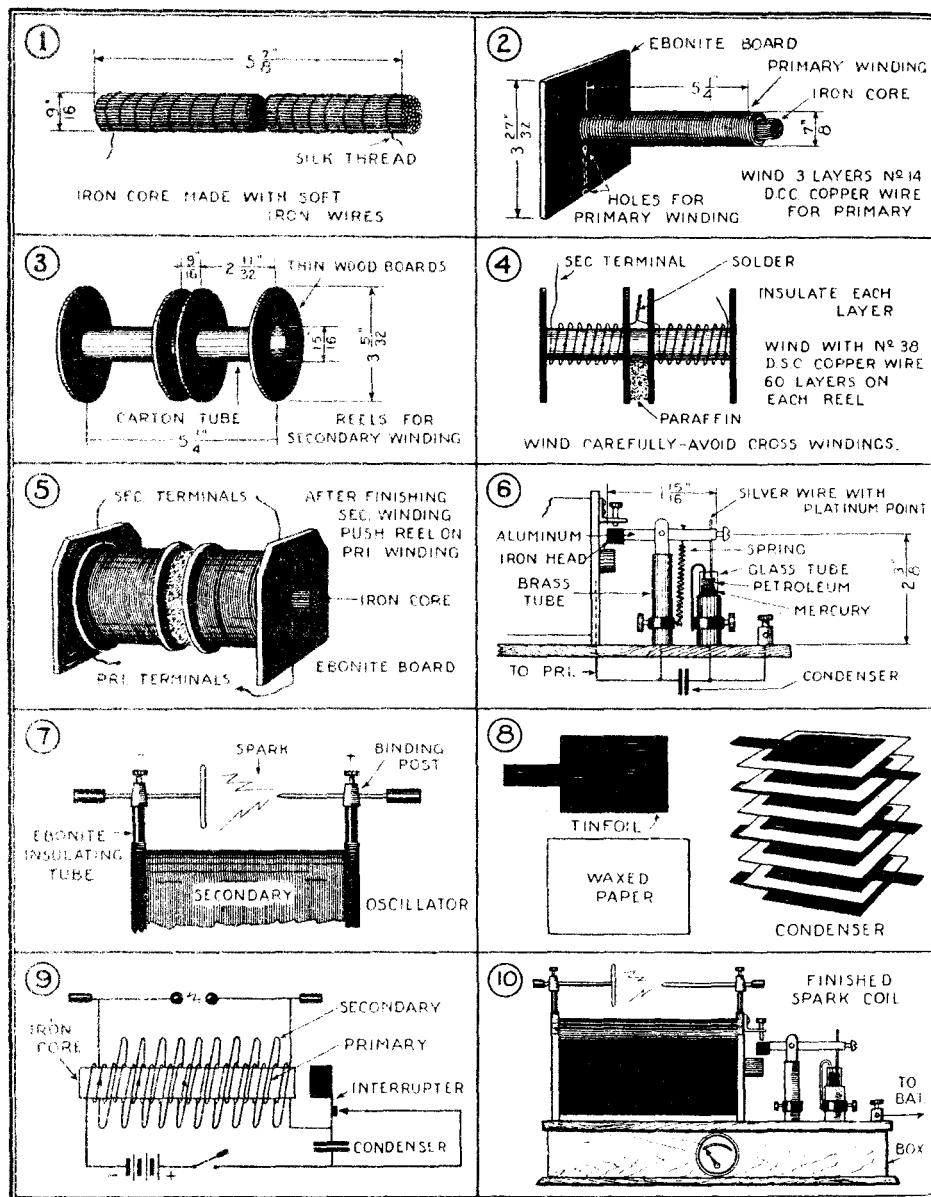
Cat. no. 819

\$4.95



Final Notes and a Simple Cell
I don't know if the construction of a photoelectric cell such as those described in this article is worthwhile versus purchasing commercial cells when you take into consideration their low efficiency and the time it takes to fabricate them. But I do know

BUILD A SOLAR CELL that really works!



A Four-Inch Spark Coil

By Ricardo Luedeke

1. **Iron Core:** Soft iron wire 4/100 inch thick is heated over a gas flame until it becomes red hot; then let it cool slowly so that you obtain very soft iron. Insulate each wire by painting with shellac in order to reduce Foucault currents, which heat the core and impair the magnetic action. Bind all the wires together with silk thread.

2. **Primary Winding:** Use No. 14 D.C.C. copper wire and wind three layers on the

core. Leave space at both ends of the core, to be occupied by the end boards. Insulate all windings with shellac dissolved in alcohol. The endings of the winding go through holes drilled in the end-boards as shown in Fig. 2.

3. **Secondary Reels:** Make two reels as illustrated. Take a pasteboard tube one inch in diameter and put on wooden end-flanges. Insulate all with shellac.

4. **Secondary Winding:** This is the most difficult part of all the construction. You will need much patience and a little care. Use No. 38 D.S.C. copper wire. Buy three pounds, a little over 20,000 yards of wire. For winding I advise you to use a sewing machine or a film roller such as used in motion picture machines. An emery grinder can be arranged to do it. I wound my coil with a film roller. Wind each reel separately but in the same direction as shown in the illustration in Fig. 4. When both windings are finished, solder the inner terminals.

Take the greatest care in insulating well every year, by means of waxed paper and shellac. You have to wind about 60 layers, which involves much work, but if well done you will obtain fine results. A four-inch spark is a nice thing!

5. **Secondary Coil Finished:** Once finished, put the secondary coil over the primary coil and put on the end-boards. The space between the two coils must be filled with paraffine poured in while melted to secure better insulation. Cover the outside of the coil with a piece of silk. For better protection make a cover of a thin ebonite piece which has been made flexible by putting it for some minutes in boiling water.

6. **Mercury Interrupter:** From Fig. 6 you will see clearly how to make the interrupter. On the silver wire you must solder a platinum point of one or two mm. 1/12 to 1/25 inch diameter. The screw above the armature is to regulate the length of the path of the interrupter. All metal parts may be nicked for better appearance. In the glass tube put a little mercury and above it a little petroleum.

7. **Oscillator:** Take two pieces of copper wire 3 3/4 inches long and about 0.1 inch thick. On one end file a point, on the other solder a circular disc of brass. The binding posts are connected to the terminals of the secondary winding.

8. **Condenser:** This consists of 250 or more sheets of tinfoil, 2 1/2 x 3 1/2 inches, separated by waxed paper 3/4 x 4 1/2 inches; they are put in them alternating, one tag to the left and the next tag to the right. To protect the condenser put it in a box, which may be placed inside the wooden box on the base of the assembled spark coil. To know the exact amount of sheets required, begin with 150 and then measure the length of the spark obtained. Add 20 or 30 more sheets to the condenser and measure again, and so continue until the spark has reached its greatest length.

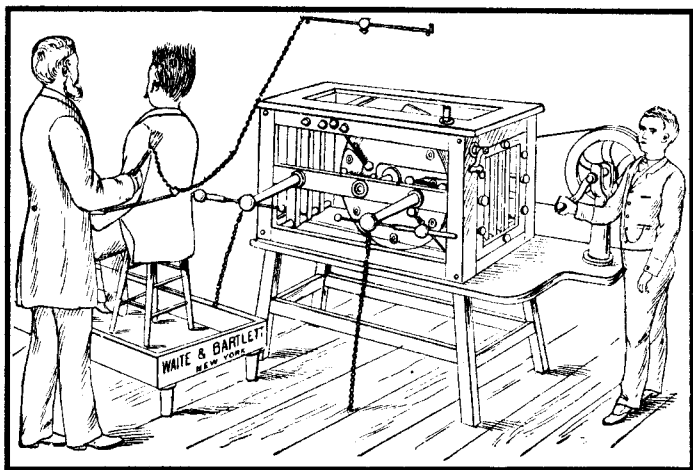
Take care that the spark produced in the interrupter disappears completely. A well balanced condenser produces the best spark on the oscillator and prevents all sparking of the interrupter. Operate with six to twelve volts.

9. **Connections:** Fig. 9 shows how to make the connections of the different parts.

10. **Assembled Apparatus:** A voltmeter and an amperemeter may be put on the apparatus.

A rheostat may also be connected in the primary circuit, for better regulating the length of spark.

If the spark coil is properly constructed, following exactly all data given here, you will obtain a nice, strong spark. With my coil I obtain a four-inch spark with 10 volts in primary circuit.



Practical Electricity in Medicine & Surgery

PRACTICAL ELECTRICITY

In Medicine and Surgery

by G. W. Overall, MD

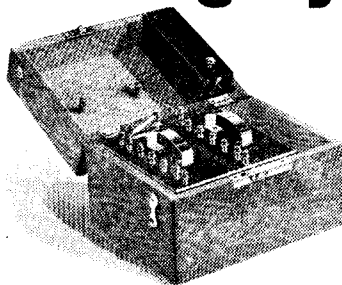
reprinted by Lindsay Publications

I'm not sure I can believe what I read in this book. Overall wants you to believe that electricity can cure everything from lead poisoning to constipation. (Of course, over the years I have gotten the — shocked out of me more than once.)

If you believe in electro-therapy, that's your business. I don't. But I do like this as an early handbook on electrical machines, the excitement they caused, and the hopes that people had that electricity would solve the world's ills, if not their own.

You'll find this to be a reprint of the rare first 1890 edition published in Memphis TN. It's broken into four parts which contain chapters covering the galvanic cell, galvanic current, Faradic current, the effect of these currents, electro-diagnosis, modes of application, the electric cabinet vapor bath, the electric tub bath, treatment of special diseases of the brain, paralysis, rheumatism, chorea, and so on. Part four covers electrolysis, organic diseases of women, electro-cautery, batteries, electrodes, and so on.

What I particularly like are the first few pages that describe and show static machines and their use, as well as galvanic battery machines, and so on. Later in the book are unusual medical electrodes that look like something out of a Frankenstein movie.



Again, I don't believe the info in the back half of book. In fact, it might be downright dangerous. But this IS a rare book that gives you a glimpse into early ideas about electricity and its use in medicine.

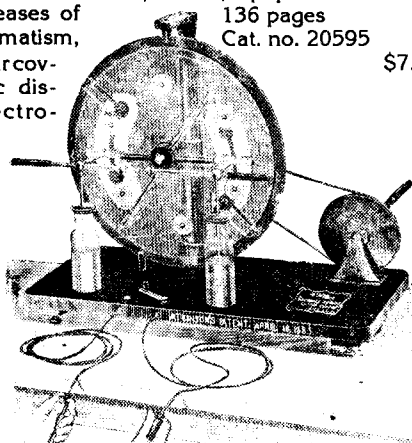
Consider this book carefully. I think it's unusual, and worth having. (After all, I don't go to the expense and trouble of reprinting books that I feel are NOT worth having. I may be crazy, but not stupid! Yes, I know. People would debate that too.) Maybe I can use this as a guide to build equipment to deal with my loonie in-laws. Maybe you can, too. Rare, interesting book. Order a copy.

5 1/2 x 8 1/2 paperback

136 pages

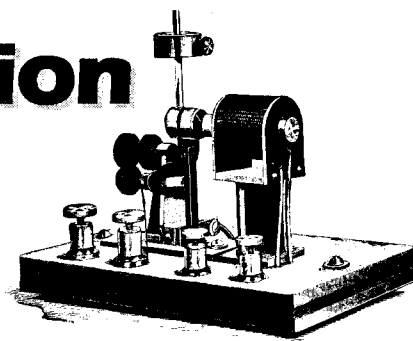
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\$7.95



Induction Coils!

How to Make, Use and Repair Them...



INDUCTION COILS

How to Make, Use,

and Repair Them

by H. S. Norrie

reprinted by

Lindsay Publications Inc

Although this classic work first appeared in 1896, this fourth edition was printed in 1907. And it's just that—a classic. It's not the best book on induction coil construction, or batteries, or wireless telegraphy, or X-Ray or any other high voltage experimentation, because

adjustable condensers, experiments with luminous effects, use of the spectroscope with coils, different forms of mercury air pumps, Geissler tubes, effects of discharges in rotating tubes, application of the Ruhmkorff coil for lighting gas, and more.

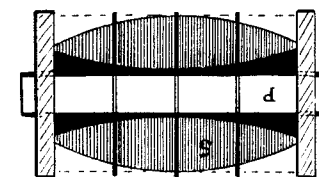
You'll learn how to build batteries: Grenet, Fuller, Gravity, Dun, Gethis, Gordon, New Standard, and others. Learn how to build and use secondary, or storage batteries. Investigate the "Tesla" effects, the use of high frequency currents in electro-therapy, ways of generating X-Rays (very dangerous), the construction of a very early wireless set using a coherer detector, and much more.

You'll find many illustrations. They aren't all that spectacular but you do get 79 drawings, and 8 tables.

This is a book that should be in every high voltage experimenter's library. It IS a classic. If it has any fault, it's that the author has tried to cover too much material in too small a book. Nevertheless, there is much here that you can use. The reprint will cost you less than the cost of an original if you can find one. Get a copy. You'll like it. 4 1/2 x 6 paperback 288 pages

Cat. no. 20510

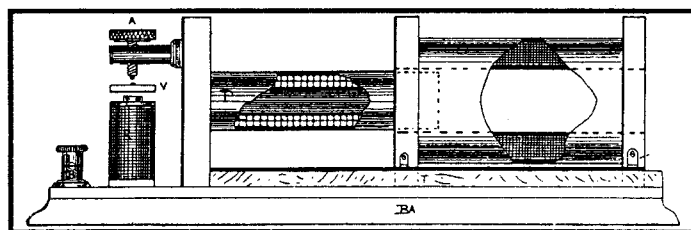
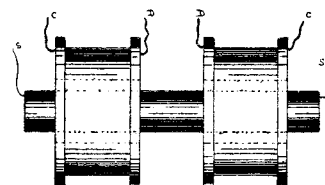
\$9.95



each chapter could be a book in itself. But it is a classic that anyone interested in lightning bolt generators tries to get his hands on. And although Norrie's book covers much the same information as others, you get a different slant, a different point of view that you will find useful.

Chapters include Coil Construction, Contact Breakers, Insulations and Cements, Condensers, Experiments, Spectrum Analysis, Currents in Vacuo, Rotating Effects, Gas Lighting, Batteries for Coils, Storage or Secondary Cell, Tesla and Hertz Effects, the "Roentgen" Rays and Radiography, and Wireless Telegraphy.

You get information, some of it quite unique, on Ruhmkorff coils, oil immersed coils, a disruptive Tesla coil, medical coil with interchangeable secondaries, mercury vibrators, Wehnelt interrupter, adjustable cone vibrator, insulating compounds, Leyden Jar construction, glass plate condensers,



EXPERIMENTAL SCIENCE!

EXPERIMENTAL SCIENCE

by George M. Hopkins

Fantastic! There is no other way to describe this incredibly illustrated two-volume set from 1906. It is certainly worth having.

Starting about 1889 "Scientific American" Magazine published a regular column by George Hopkins showing readers how they could build experimental equipment and test their own versions of new inventions such as the electric light, telephone, and phonograph. Hopkins' columns were routinely reprinted in books, and this 25th edition from 1906 had to be split into two volumes. And what a pair of volumes they are!

You'll find some of the most fantastic wood engravings ever, illustrating experimental equipment of all types.

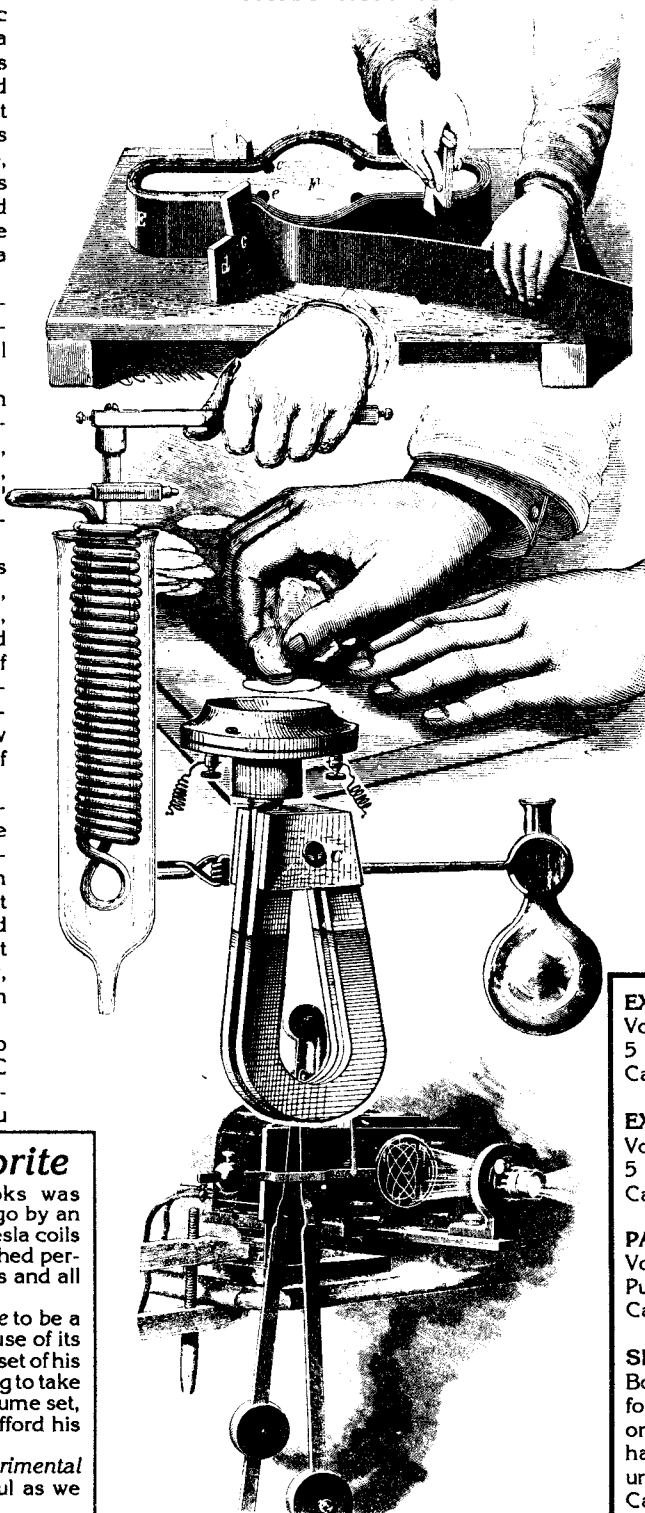
Volume One consists of nineteen chapters on rest, motion, force, gyroscopes, liquids, gases, sound, heat, light, polarized light, microscopy, photography, magnetism, frictional (static) electricity, dynamic electricity.

Build a gyroscope, Foucault's pendulum, a simple hydraulic press, a hydraulic ram, simple air pump, Geissler tube, a recorder for sound vibrations, device for production of sounding waves, a simple phonograph, centrifugal siren, and Norremberg Doubler. And these are just a few of the projects in only the first half of the first volume!

You can build a simple microscope and accessories, or a simple camera with plate holder, make Daguerreotype photos like those from the 1840's (dangerous), experiment with magnets, static electricity, build all kinds of batteries, a device that converts heat directly into electricity, build bells, electromagnets, and even a 1/4 hp electric motor.

Volume Two will take you into more electricity by investigating AC electricity, arc lamps, high voltage induction coils, and much more. You

Over 1,000 Pages! • Incredible Machines! • Forgotten Experiments! • Incredible Illustrations!



can build a telephone. Build a magic lantern and perform a variety of interesting projections.

You'll get practical how-to on blowing glass, making lenses, etching glass, making test tube racks and the like, making and using a crucible furnace, sand casting, making carbon rods and plates, and more.

You'll be shown how to perform a variety of scientific parlor tricks. Discover scientific uses for the phonograph, build an opaque projector, and a simple acetylene gas generator. Try experiments with super cold liquid air, or new advances in photography including color photography, divining rods and metal detectors, long distance telephony, new wireless telegraphy, building an electric clock, high voltage experiments, even poly phase electricity!

If you haven't guessed by now, this is both an introduction to physics and simple directions for building strange equipment.

The how-to you get is not overly detailed. You're expected to have some mechanical ability. You *WILL* get excellent illustrations that will show you almost everything you need to know. Any additional secrets are pointed out in the text.

If you want to build and run scientific equipment that hasn't even been seen in decades, you should have this. Kids can build a unique science fair project. Old book lovers will treasure this. And if you love machines, you will get hours and hours of enjoyable reading.

It's impossible to reveal the scope and beauty of these two books in the limited space this catalog provides. But take my word for it, these are fascinating books. Top quality. Expensive, but worth the price. Look them over carefully.

Researcher's Favorite

The existence of these books was pointed out to me several years ago by an avid experimenter who has built Tesla coils and Wimshurst machines, researched perpetual motion, free energy devices and all types of unorthodox subjects.

He found *Experimental Science* to be a very valuable reference, but because of its rarity, he hadn't been able to buy a set of his own. When I told him that I was going to take a chance on reprinting the two volume set, he jumped for joy. Now he can afford his own set. So can you.

We're confident you'll find *Experimental Science* as much fun and as useful as we have.

EXPERIMENTAL SCIENCE

Volume One

5 1/2 x 8 1/2 paperback 560 pages

Cat. no. 4490 \$19.95

EXPERIMENTAL SCIENCE

Volume Two

5 1/2 x 8 1/2 paperback 532 pages

Cat. no. 4503 \$19.95

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Volumes One & Two

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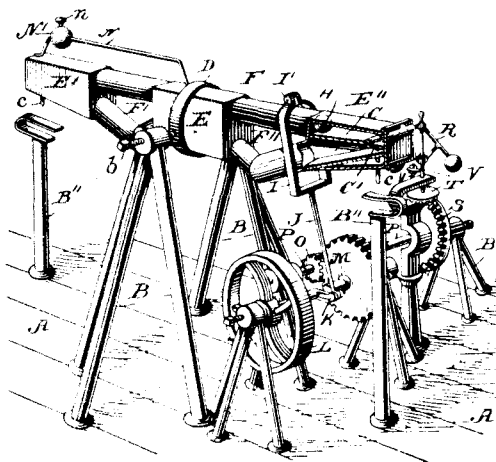
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SPECIAL HARDCOVER OFFER

Both volumes in sewn hardcover bindings for libraries and collectors. Available in sets only. Relatively few hardcover volumes have been printed. Availability may be unpredictable.

Cat. no. 927 \$48.95

FIFTY Perpetual Motion Mechanisms

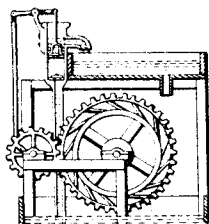
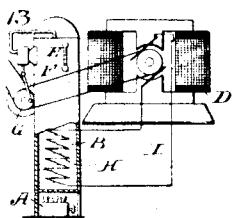


FIFTY PERPETUAL MOTION MECHANISMS

by Fred Dieterich
reprinted by Lindsay Publications

The author was a patent attorney at the turn of the century. I suppose that so many people considered themselves inventors and presented him with so many headaches that he wrote a book entitled "The Inventors (Universal Educator)" covering the process of securing a patent. It sold for many years starting 1899.

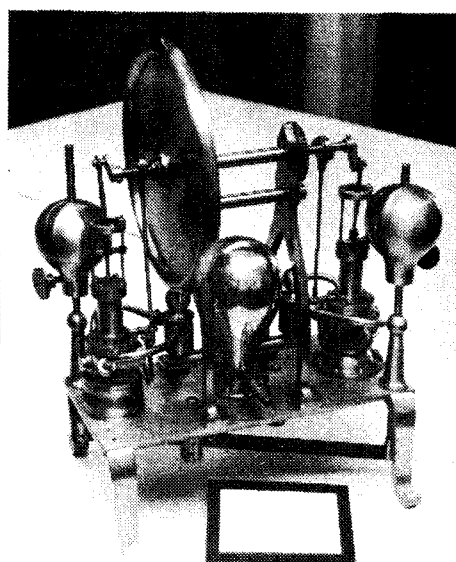
One short section of his book covers perpetual motion inventions which are unpatentable. Dieterich, who was outraged by claims of perpetual motion, presents drawings of 50 different mechanisms. No doubt, you've already seen a number of these, but others are unique, and all are interesting.



You'll see the Marquis of Worcester wheel, the Horace Wickham machine, the 1868 device of Dr. Drasch of Austria, an electric device, the self-moving railway, the Orffyreus 1720 wheel, a complicated water screw, and others.

If you're into PM, you'll want to add this to your collection. Maybe you're trying to build a machine and want to avoid previous failures. Or you're a skeptic and want a good laugh. Whatever, the material is interesting and the price is low. Get a copy. You'll like it. 8 1/2 x 5 1/2 booklet 22 pages
Cat. no. 898

\$3.75



PERPETUAL MOTION HISTORY

PERPETUAL MOTION The History of an Obsession

by Arthur Ord-Hume

People for centuries have attempted to build a machine that will produce more energy than it consumes. And they've all failed.

If you think you've invented a new type of perpetual motion machine, you had better read this book. Chances are, it has already been attempted.

For the rest of us, this book is interesting reading. There are some machines, that don't actually produce energy, but they run seemingly forever on a small amount of energy, like Singer's perpetual chime that was set up in 1840 and is still operating!

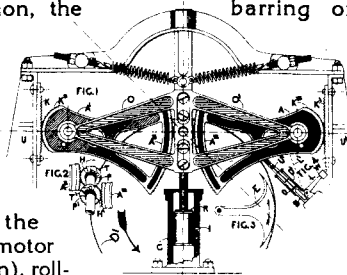
Learn about medieval machines, self-moving wheels, lodestones, electromagnetism, steam, capillary attraction, spongewheels, Cox's machine, the Redheffer device, the Keely motor, odd ideas about vaporization and liquification, the

barring of perpetual motion devices form the patent office (a little though the magnet motor sneaked in), rolling ball clocks, and more. You get lots of illustrations, and an excellent list of references for further reading.

Interesting book! Well written and researched. Excellently done. If nothing else, put one in your reference library. It's not all that expensive. 5 1/2 x 8 1/2 paperback 235 pages.

Cat. no. 510

\$6.95

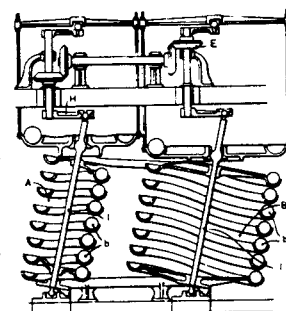


PERPETUAL MOTION MYSTERY

THE PERPETUAL MOTION MYSTERY

by R. A. Ford

Perpetual motion. Some people laugh at it. Others take it very seriously. Here's a serious look at these unusual systems.



First, you get a reprint of the small and now-rare "Perpetual Motion Handbook Through Entropy Reversal" published in 1967 by I. R. Barrows. Then, you get his first (and last) four "Perpetual Motion Journals" published about the same time. Each is small but filled with letters patents, ideas, illustrations, and thought-provoking suggestions.

The author jumps into a discussion of why perpetual motion might be possible, pointing out unusual theories from the past, and pointing out possible defects in current theories.

Covered are kinetic gravitational theories of the 18th century, DesCarte's Vortex Theory, LeSage's Impact Theory of Gravity, and Brush's Wave Theory. Attempts at experimental confirmation of these theories are then provided.

Natural gravitational anomalies such as solar eclipse, bulging river surfaces, bore at sea, unusual rock movements, slowly falling hail are revealed. You'll learn about Robert Cook's inertial propulsion device and its relation to Newton's Law.

The last large section covers the Orffyreus wheel built in Germany centuries ago. The author believes it might have been the only real perpetual motion machine yet invented, the secret of which was lost. You'll learn about the inventor's life, his education, his wheels, his successes and failures, the tests, and more.

Last, the author, based on the material presented in earlier chapters suggests how a perpetual motion machine might be built.

You get a collection of strange, rarely seen stories and phenomena that might hold the key to perpetual motion, if, indeed, such a machine can be built.

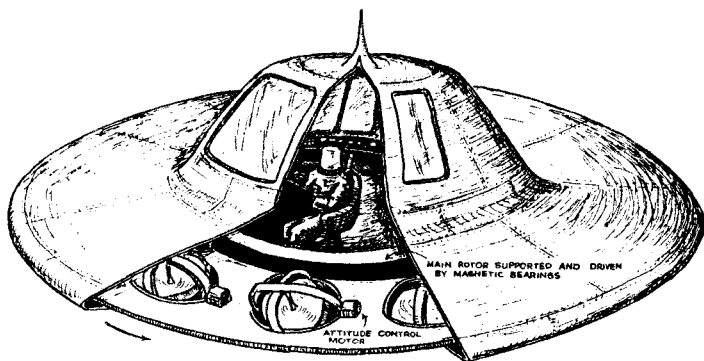
This is not a construction manual, nor is it extremely complex. It's a notebook gathered over the years, one that should be interesting to believers and non-believers.

Consider it. You won't find anything quite like it on the market. Different. Unusual. Interesting reading. Get a copy.

5 1/2 x 8 1/2 paperback 196 pages

Cat. no. 4538

\$9.95



HOW TO BUILD A FLYING SAUCER

How to Build a Flying Saucer

by T. B. Pawlicki

"And other proposals in speculative engineering".

Well, that says it. "Speculative Engineering". I think this guy is a dreamer. But dreaming can be fun, especially about these far out topics.

From the back cover-

"Have you ever wondered how the pyramids and Stonehenge were really built? If the Russians can trigger earthquakes in the U.S.? Whether the alchemist really transmuted iron into gold? If time travel is really possible?

If scientists really wanted to, could they demonstrate the Theory of Relativity with a pinch of salt on the kitchen table? Draw free energy from the earth's atmosphere? Construct a flying craft that behaves just like a UFO?

Now... Pawlicki reveals the known technology and forgotten inventions (including some registered with U.S. Patent Office) that show how many 'impossible' invention might actually be accomplished today! Here are sketches for cranes that could have transported the pyramid stones to Giza, the principles for traveling between time streams, and a new scenario of how our solar system evolved.

Copiously illustrated with detailed diagrams and blueprints, [this] will delight armchair physicists, weekend engineers, science-fiction buffs, and the insatiably curious - an anyone who relishes informed speculation..."

Wild stuff! If you really expect to be able to build a saucer, forget it. But if you want fun reading, this is worth the price. If I can build my own saucer and escape from here, my employees can stop praying that aliens will arrive and abduct me! On the other hand, maybe I can discover a way to turn lead into gold! Off the wall! Get a copy! 5 x 8 1/2 paperback 152 pages

Cat. no. 181

\$8.95

Successful Project

"I am not writing this letter to complain, but to compliment you on your incredibly quick and efficient mailing service. You see, I am 11 years old, and making a Tesla Coil for a science project. I have ordered some reference books from you, and got them in a few days. The project was a success, thanks to Lindsay's efficient service."

Mandy Straker, Highland, Indiana

The Complete Books of

CHARLES FORT

by Charles Fort

Strange! Very strange! A must book for anyone who researches unexplained phenomena. The dust jacket explains the book better than I can...

"Did beings from outer space visit earth in the past... are the various objects seen in the sky (flying saucers, in modern terminology) evidences of their visits?"

"What is the explanation of falls of frogs, falls of fishes, falls of sea-shells, which have been recorded from time to time? Are they explainable in terms of selective tornadoes, or are they evidences of a planetary mechanism that we do not know?"

"How can we answer reports of strange animals, disappearances of men from open sight, curious structures in the snow, talents like teleportation and telekinesis?"

"These are the 'damned,' by which the late Charles Fort meant all the wide range of mysteries that are ignored by orthodox science or explained away improperly.

"Charles Fort worked full time for twenty-seven years at the British Museum and the New York Public Library researching scientific journals, old periodicals, news-



The Strange Books of Charles Fort

Four Mysterious Books in One!

papers, and manuscript accounts to gather material on phenomena from the borderlands between science and fantasy. His researches appeared in four books, *The Book of the Damned* [1919], *New Lands* [1923], *Lo!* [1931], and *Wild Talents* [1932].

"In these four volumes Fort gathered together, organized and commented on a wild host of phenomena: flying saucers seen in the sky before the invention of aircraft, flying wheels, strange noises in the sky; correlations between volcanic activity and atmospheric phenomena; falls of red snow; falls of frogs, fishes, worms, shells, jellies; finding of 'thunderbolts'; discrepancies in the schedules of comets, sightings on Mars and the moon; infra-Mercurian planets; inexplicable footprints in snowfields; flat earth phenomena, disruptions of gravity; poltergeist phenomena; stigmata; surviving fossil animals; the Jersey devil; Kaspar Hauser; spontaneous combustion...."

"Charles Fort himself never really explained his phenomena... yet through the years his following has grown...."

In this three-inch-thick hardcover book you'll find more details on more strange, unexplained events than you'll find anywhere else. It's an incredible collection that should be part of any library on fringe science. If you specialize in the gray area at the outer edge of science, you must have a copy of this. Recommended.

No illustrations, but there is a complete and detailed index.

5 1/2 x 8 1/2 hardcover 1126 pages

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**Angels & Aliens
UFOS AND THE MYTHIC IMAGINATION**
by Keith Thompson

From the dust jacket:

"In a brilliant stroke, Keith Thompson takes a subject usually confined to checkout-counter tabloids and reveals its surprising literary richness, intellectual energy, and symbolic depths. By offering a new, open-ended perspective which avoids the dogmatism of true believers and debunkers alike, 'Angels and Aliens' invites readers to enter a fascinating world with profound implications of our understanding of the human spirit.

Why we're so willing to believe in UFO's...

Fascinating book!

It was Carl Jung who first spoke of the UFO phenomenon as 'a modern myth in the making,' and Joseph Campbell who insisted that the first function of myth is 'opening mind and heart the utter wonder of all being.' Now Keith Thompson makes it possible for us to share that sense of wonder as he explores the UFO against the timeless backdrop of visionary experience: angelic visitations, near-death experiences, shamanic journeys, religious miracles, and folkloric encounters with fairies and dwarfs..."

This is an intellectual exploration of people who are desperate to believe in UFO's and people are so eager to demolish the stories. The author says whether UFO's exist is not that important. He talks about our need to believe, to wonder, to feel part of the unknown. UFO's are not unlike Leprechauns or Santa Claus is some important ways. There may be real UFO's and real reports. The point of this book is how people react to the

reports and the pleasure they get from them. In other words this psychology and philosophy. It's an explanation of our interest in fringe science. No doubt, the conclusions are applicable to our wanting to believe big business or the government is suppressing revolutionary inventions.

Next time you're at the supermarket and see the headline on a tabloid that reads "Dwarf Rapes Nun - Escapes in UFO" and you laugh in disbelief, then this book is for you. If you buy the tabloid because you believe the headline, you don't stand a chance at understanding the author.

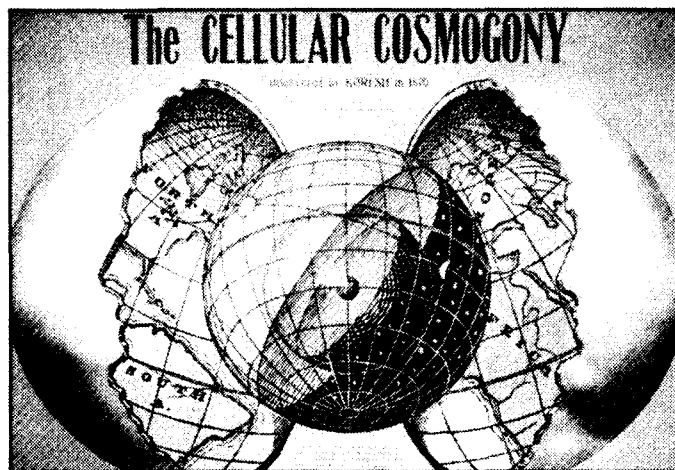
Interesting. Intellectual. Serious but great fun. People have been known to read the whole book in a single sitting! Consider it carefully. 6x9 hardcover 283 pages
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Decided Not to Go to Saturn After All

"You guys are the only reason I don't emigrate to Saturn. Your catalogue provides more good reading, info, enjoyment, non-B.S. than 99% of the rest of the human race. If I won the lottery I would give it to you & tell you to keep the catalog; send all the books. Thx!"

Tom Goetz, New Seden, Maine



ON THE WILD SIDE

by Martin Gardner

The dust jacket says it better than I could-
"I have always been intrigued by fringe science," writes Martin Gardner in the preface to this book, 'perhaps for the same reason that I enjoy freak shows and circuses. Pseudoscientists, especially the extreme cranks are fascinating creatures for psychological study. Moreover, I have found that one of the best ways to learn something about any branch of science is to find out where its crackpots go wrong.'

A unique combination of horse sense and drollery has made Martin Gardner the undisputed dean of the critics of pseudoscience. This bountiful collection of recently published essays and articles will be wholeheartedly greeted by Gardner's fans, as well as by new readers.

This collection of articles - many of which first appeared in *The Skeptical Inquirer*, *The New York Review of Books*, and *Free Inquiry* - explores pseudoscience and strange religious beliefs with the author's trademark wit and verve. Destined to be a classic of skeptical literature, this book roves over the wide range of topics - including UFOs, rainmaking, ghosts, the Big Bang, ESP, Oral Roberts, as well as the early history of spiritualism and today's bizarre 'trance-channeling' cults..."

Contents include mention of nutshell earth theory, Wilhelm Reich the rainmaker, Gaiaism, the Great Urantia Book Mystery, the Titanic, Sad Story of Professor Haldane, Forrest Mims, Linus Pauling and Vitamin C, Astrology and the Reagans, blunders of Oral Roberts, Fatherly advice to Tammy Faye Baker and much more.

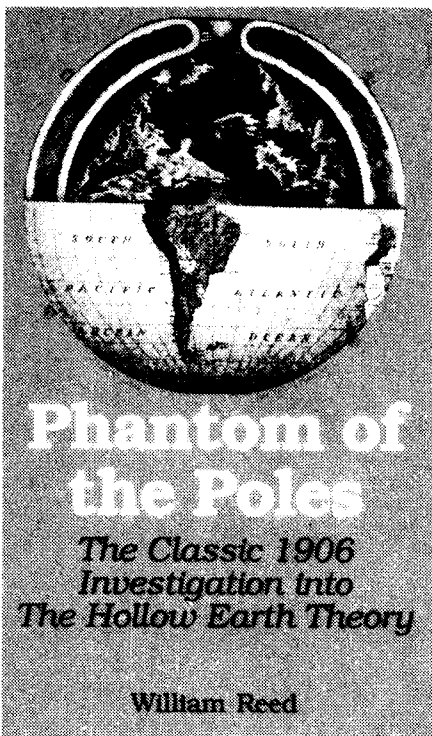
These are short, fast-reading amusing stories with a message. If you believe in the stuff he shoots down, you're gonna hate him! Otherwise, I think you'll like this book. What amazed me is that the fringe science I'm acquainted with is just the tip of the ice berg! I must have led too sheltered a life! There are more unusual ideas out there than I ever imagined. He rips them all!

Fortunately, I did not find him talking about my steam-powered gyrocopter truss. I'm trying to sell it to unsuspecting manufacturer down the street. I was afraid Gardner might blow the deal for me...

Fun reading. Don't buy it if you're a true believer in fringe science, 'cause you'll just get your feelings hurt. Otherwise very much worth considering. 6x9 hardcover 257 pages

Cat. no. 764

\$24.95



THE PHANTOM OF THE POLES

by William Reed

reprinted by Lindsay Publications

The earth is hollow! I don't think so, but a lot of people do. And this is a reprint of an early, rare classic text on the topic. Some people claim that there are holes at the ends of the earth that lead into the interior where there are continents and civilizations that are yet to be discovered. In fact, some people claim that NASA satellites have photographed these holes but that the photos have been suppressed. In this book Reed set out to explain unexpected and unexplained phenomena seen at the poles.

Chapters include flattening of the earth at the poles, length of polar nights, working of the compass, around the curve, mysteries of the polar regions, the water sky - what it is, the aurora, meteors or volcanic disturbances, finding of rock in and on ice, dust in the arctic, open water at the farthest point north and south, why it is warmer near the poles, driftwood - whence it came, have others that Esquimos inhabited the arctic regions?, what produces colored snow in the arctic, where and how are icebergs formed, the tidal wave, clouds and fogs, arctic and antarctic winds, the centre of gravity, cannot reach the poles, and what is in the interior of the earth.

You'll find a variety of illustrations, but don't expect photographs. I can't recall anyone ever visiting the center of the hollow earth.

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Aaron Banerjee
Carbondale IL

The Earth is Hollow!

A Rare 1906 Hollow Earth Classic is Back!

You'll find references to this rare 1906 classic mentioned in the few articles published on the hollow-earth theory in recent years. Now you can put a copy in your reference library at a fraction of the cost of an original assuming you can find one.

My screw-ball book printer thought at first that this was a book about a Polish super hero. I told him that my late Polish grandmother might have been offended by that comment. But on the other hand, she might have thought the book was her biography! I hope my book-printer can print better than he can think....

Rare book. Unusual. An essential part of that realm of unusual scientific theories and/or myths that never seem to die. Worth having? I think so. Consider it. 4 1/2 x 7 paperback 280 pages

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Edison's Assistant Remembers Menlo Park!

Relive Edison's most inventive years!

MENLO PARK REMINISCENCES Vol 1

by Francis Jehl

Great Book! Not only do you get the inside scoop on the electric light, the phonograph, mimeograph, the telephone (Bell beat Edison to the patent office by one day), but you get the anecdotes that proves how brilliant and bizarre Edison really was. This was a guy that I would have liked to meet, a guy who chewed tobacco, spit on the floor, told vulgar stories and was known for his creativity and sense of humor - a true "character".

From the backcover:

"In this revealing book, a former laboratory assistant to Thomas Alva Edison (1847-1931) recalls life in the great inventor's laboratory and workshops at Menlo Park....



Eighteen years old when he first arrived in Menlo Park in 1879, Francis Jehl subsequently witnessed a flood of ingenious inventions...

Offering exceptional coverage of the technical aspects of Edison's work, this profusely illustrated volume will also fascinate the general reader. (The author's account of Edison playing with his newly developed phonograph is delightful!).... Nearly 400 photographs and illustrations depict Edison and his assistants; Menlo Park; Edison's laboratory, inventions and instruments; the restored sites at Henry Ford Museum & Greenfield Village; and more....

Brimming with anecdotes and intimate first-hand observations, Menlo Park Reminiscences provides 'a really lively picture of Edison at work'...

If you're into the history of technology, or you would really like to "meet" one crazy, talented guy, then you should have this book. Edison would have devoured this catalog had it existed in his day. He was one of us. (Well, maybe he wasn't THAT bizarre...) Fascinating book. Get a copy. 5 1/2 x 8 1/2 paperback 448 pages 113 illustrations 267 photos

Cat. no. 377

\$13.95

SPACE AGE PROJECTS

Zap 'em with lasers

Build Your Own Working FIBER OPTIC INFRARED AND LASER SPACE-AGE PROJECTS

by Robert E. Lannini

From the back cover:

"Here, you'll find plans for such fascinating devices as a high sensitivity laser light detector... a high voltage laboratory generator that's useful in all sorts of laser, plasma ion, and particle applications as well as for lightning displays and special effects... a solid-state gallium arsenide injection laser system capable of producing 4- to 30-watt peak power infrared pulses at 200 to 2500 pulses per second... an infrared viewer that has functions ranging from nighttime surveillance to viewing IR laser beams..."

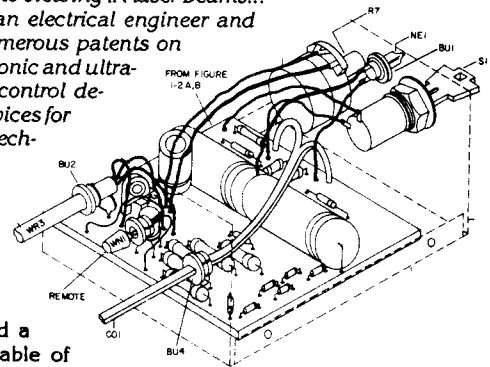
"Robert Lannini is an electrical engineer and inventor. He holds numerous patents on such products as electronic and ultrasonic insect and pest control devices, stay-awake devices for drivers, and other high technology devices..."

You get fourteen different projects, twelve of them being laser devices. But even chapter fourteen oughta fire ya up! He'll show you how to build a DC power supply capable of delivering microamps of current at voltages adjustable from 35,000 to 250,000 volts! This is not a Tesla coil. This is similar to the high voltage supply in a TV set with a voltage multiplier attached. The voltages produced are so high that generation of X-Rays becomes a very real danger when using this machine. You have to be careful.

You get schematics, diagrams, step-by-step how-to, safety precautions and more. Unusual how-to, to say the least!

Imagine! The next time you catch raccoon digging through your garbage cans, you can nail them with a laser! Fry the roaches under the kitchen sink! Clobber that snake the comes slithering out of the toilet bowl and scares the hell out of your mother-in-law. (On the other hand, let the snake be. He's too much fun...)

Get a copy of this, build yourself a laser and a lightning bolt generator. Strange, hi-tech stuff. Go for it! 7 1/2 x 9 paperback 262 pages
Cat. no. 393 \$16.95

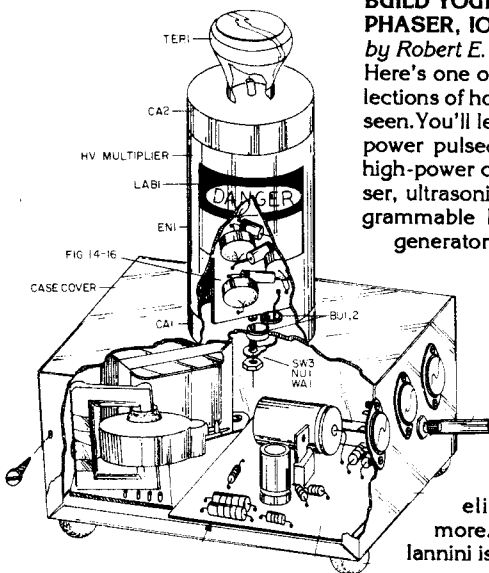


BUILD YOUR OWN LASER, PHASER, ION RAY GUN. . .

by Robert E. Lannini

Here's one of the most bizarre collections of how-to plans I have ever seen. You'll learn how to build high-power pulsed red ruby laser gun, high-power continuous IR CO2 Laser, ultrasonic field generator, programmable high-power ultrasonic generator, 250,000 volt Tesla coil, magnetic field distortion detector, solid-state Tesla coil, a variety of wireless "bugs", a super-sensitive parabolic microphone, electronic paralyzing device, battery charger and eliminator and much more.

Lannini is an experienced elec-



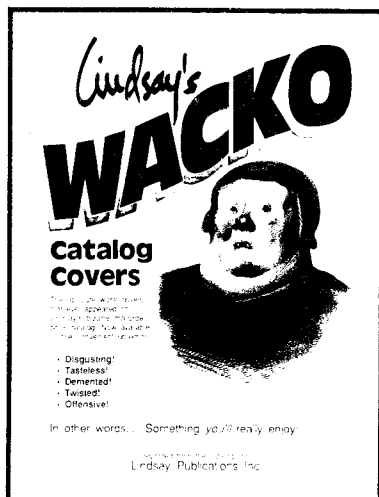
LASER PHASER

Unusual Plans!

- beginner's simulated laser
- visible red laser
- pulsed laser rifle
- ruby laser gun
- CO2 laser
- laser light detector
- plain field generator
- phaser shock-wave pistol
- ultrasonic generator
- ultrasonic listening device
- 250 kv Tesla Coil
- ion ray gun
- magnetic field distortion detector
- light-beam communicator
- solid-state Tesla coil
- infrared viewer
- FM voice transmitter
- long-range telephone xmtr
- parabolic microphone
- paralyzing device
- wireless repeater xmtr
- much, much more!

tronics inventor, and holds many patents. He'll give you parts lists, wiring diagrams, assembly diagrams and all you need to get these projects built. I don't think that it's any coincidence that almost every plan has a footnote telling you that kits are available from Information Unlimited, Inc., which is owned by the author and which advertises in the back of the science and mechanics magazines. No doubt, that firm's best selling plans have been reprinted in this single volume.

This book is expensive, but it delivers. I really like this, and I'm sure you will too. Order a copy, even if it has to sit for two years on the shelf before you get ready to build. Excellent book. 8 x 9 1/2 paperback 390 pages.
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Now! You can get sick once again! Reread the bizarre catalog back covers that have made Lindsay's name a household word in mental institutions throughout the world.

You get 28 bizarre covers some of which you may have already seen: bandage your nose with a jock strap, zapped by Tesla, nude photos, worst case of baldness, and much, much worse! Disgusting! Tasteless! Demented! Just the kind of garbage you have come to enjoy! (Careful or you will be widely known as a wacko, too!)

Have some fun with this! The booklet is actually free. The price reflects handling and shipping more than anything else. We have a bunch on hand, but we don't intend to reprint. So if you want one, you had better get one sometime soon. While they last! And you had better get one before the steam-powered computer craps out....

Just something else to clutter the coffee table or line the garbage can...

1/2 x 11 booklet 31 pages

Cat. no. 20927 \$2.00

FREE WITH ANY ORDER OVER \$40.00. WHILE THEY LAST...

Experimental Physics

Procedures in
EXPERIMENTAL PHYSICS
by John Stong
reprinted by Lindsay Publications

If you consider yourself an experimenter, an inventor, or a builder of unusual machines and equipment, you must have a copy of this fantastic classic text. No two ways about it.

You'll find wall-to-wall practical how-to and incredible illustrations on almost every one of the more than 600 pages. Chapters include: laboratory glass blowing, laboratory optical work, technique of high vacuum, coating of surfaces by evaporation and sputtering, the use of fused silica, electrometers and electroscopes, geiger counters, vacuum thermopiles and the measurement of radiant energy, optics, photoelectric cells and amplifiers, photography in the lab, heat and high temperature, notes on the materials of research, notes on the construction and design of instruments and apparatus, and molding and casting.

This is some incredible stuff! Learn how to blow glass and make aspirators, distillation condensers, and so on. Learn how to seal copper to glass so that you can imbed electrodes. This could be handy for trying to make light bulbs, vacuum tubes, or x-ray tubes maybe.

Learn how to rough cut lens blanks from large plates of glass and then grind them into lenses on your homebuilt lens grinder. Learn how to make a parabolic telescope mirror using the standard techniques. Learn to make unusual equipment to test the finished mirror. Learn how to grind a Schmidt lens.

To create high vacuum you'll read about roughing pumps, the vapor pressure of waxes, getters for creating the highest vacuums, and learn to make a variety of diffusion pumps using mercury and oil. See charcoal traps, kinetic vacuum systems, vacuum gauges of all types. Remember, all this comes with construction details.

Learn how to silver mirrors with a variety of methods including vacuum sputtering. You'll find extensive details on the evaporation technique for aluminum.

Fused quartz is valuable because unlike glass it can withstand extreme temperature changes without shattering. Learn how to build

Incredible Laboratory Secrets!
Wall-to-wall Illustrations!
Rare "how-to" information!
Reasonable Price!

ray and cosmic ray work. Build a Geiger counter. You can build your own Geiger-Mueller tube if you master the high-vacuum technique taught earlier. Unfortunately, most of the electronics described is based on vacuum tubes of fifty years ago rather than on transistors.

Build vacuum thermopiles that measure infrared, visible light and ultra-violet so accurately that they can be used to calibrate photographic lightmeters and such.

You've heard of carbon arc lights, but do you know how to build iron arc lights? Or low pressure mercury arc lights? And others? You can even build a machine to measure the wavelength of colored light.

You'll find details on hydrogen furnaces, crucibles, burners, electric arc furnaces, and even a lab setup for making artificial rubies and sapphires! And there's much more - even down to what we consider the "easy stuff" like using a lathe and sand casting.

You should see by now that this is a fantastic book loaded with construction secrets for unusual equipment. And you should now understand how a book first published in 1938 went through a couple of dozen printings! It's a classic. It's incredible. You should have a copy for reference if nothing else. Highly recommended. Order a copy today.

5 1/2 x 8 1/2 sewn paperback 642 pages
Cat. no.4562 \$23.95

SOMETHING YOU SHOULD KNOW

This is no ordinary paperback book. "Experimental Physics" is printed on acid-free paper and is sewn like a hardcover book to prevent pages from falling out.

According to pricing formulas, it should sell for much more. If a book like this were released today by a certain major book publisher whose books I've carried from time to time, they would charge from \$45 to \$65 a copy. Maybe even more. At \$23.95 it's a steal. Get a copy.

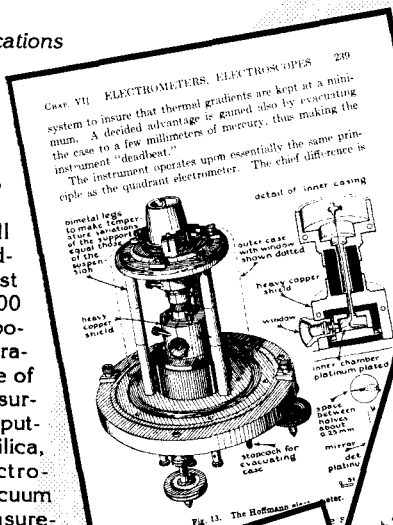


Fig. 13. The Hoffman electrometer.

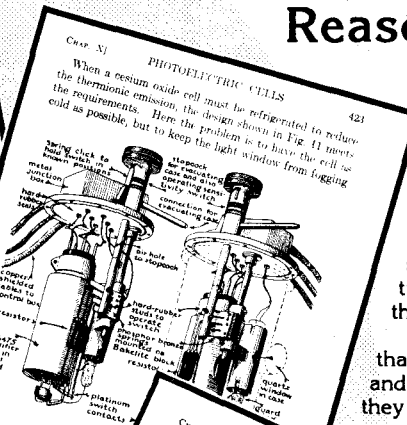


Fig. 10. Method of mounting photoelectric cell.

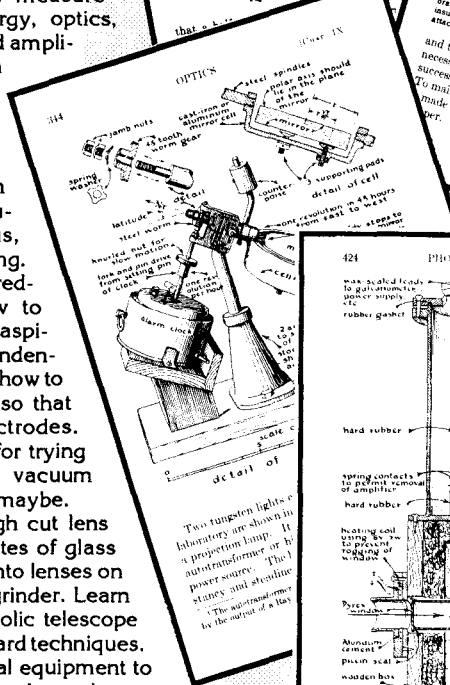
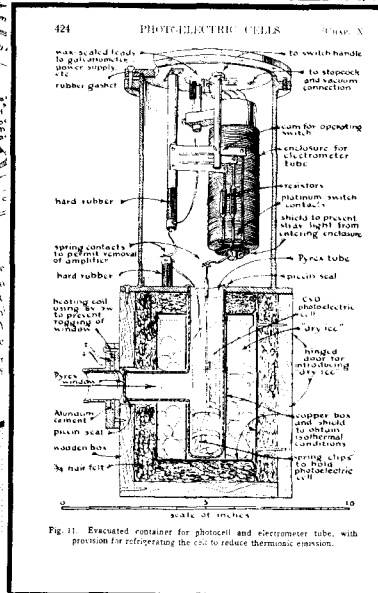


Fig. 11. Evacuated container for phototube and electrometer tube, with provision for refrigerating the cell to reduce thermionic emission.



micromanipulators and all the rest of the equipment to produce tiny fibers that can be used for suspending the elements of an electrometer, for cross hairs in optical instruments, or for building a balance. The microbalance shown is supposed to be sensitive down to a billionth of a gram per division!

And there's so much more! Build a Compton adjustable quadrant electrometer, a Hoffman electrometer, and others useful for x-

NEON SIGNS

Great How-To on Glass Blowing, Vacuum Systems, High Voltage and more from 1935!

NEON SIGNS

by Miller & Fink

reprinted by Lindsay Publications

Sure. Equipment, techniques, and sign design have changed since this book first appeared in 1935, but not all that much.

Even if you're not interested in making neon signs, you'll find loads of useful information on rare gases, glass blowing, and vacuum systems that could be useful in experimental physics, high voltage, or even in building your own experimental vacuum tubes!

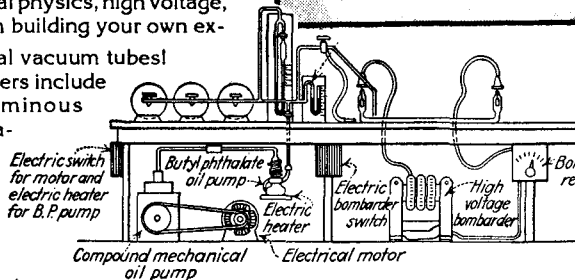
Chapters include the luminous tube, materials,

electrical equipment, types of signs,

designing the sign, glass bending, pumping systems, bombarding, filling, testing, aging, installation equipment, special applications, tricks of the trade and more!

This is a quality straight-to-the-point book loaded with diagrams and photographs that you won't find just anywhere. It might be fun to make bizarre neon signs, repair "antique" signs, or just get into the trade. But even if that's not your goal, you'll find loads of unusual, interesting information. Consider this carefully. It certainly is NOT run of the mill. Order a copy. 5 1/2 x 8 1/2 paperback 288 pages
Cat. no. 20340

\$12.95



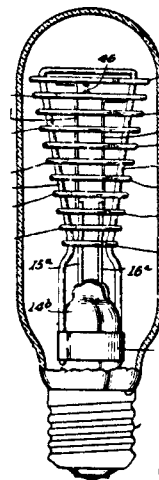
LAKHOVSKY MULTIPLE WAVE OSCILLATOR HANDBOOK

compiled by Thomas J Brown

Supposedly sometime before World War II, Russian experimenter Lakhovsky asked Nikola Tesla to help him design a high voltage generator that could produce electrical energy at many different frequencies simultaneously. A model of the machine was tested by physicians of the time who found that it not only had a 98% cure rate for terminal cancer, arthritis, and other "hopeless" diseases, but that it could rejuvenate plants and animals as well.

No doubt the oscillator works and is an interesting piece of equipment, but I wouldn't stake my health or anyone else's on it. Quack medicine machines were everywhere in the 1920's & 30's. This could well be another.

In this typewritten report you get historical details, wiring diagrams, construction tips, articles on waves that heal, "docu-

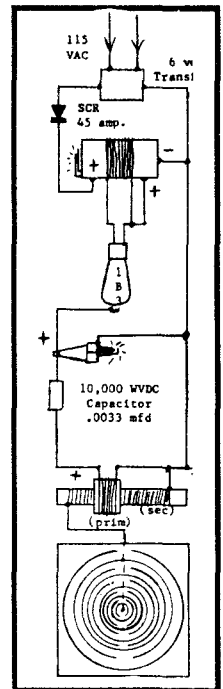


Lakhovsky Multi-Wave Oscillator

mented" cases of cure, reprints of the Lakhovsky patents, and a series of reprinted magazine articles on the use of radio frequency waves to cure disease.

Modern physicians have found that electrical fields can speed healing of wounds in some instances. Perhaps this material has some merit, or perhaps it's all a hoax. Maybe it's another suppressed invention. You figure it out. You'll find it interesting reading — a very unusual collection of material. Get a copy. 8 1/2 x 11 spiral bound 156 pages
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\$17.95



PRIMARY BATTERIES

PRIMARY BATTERIES

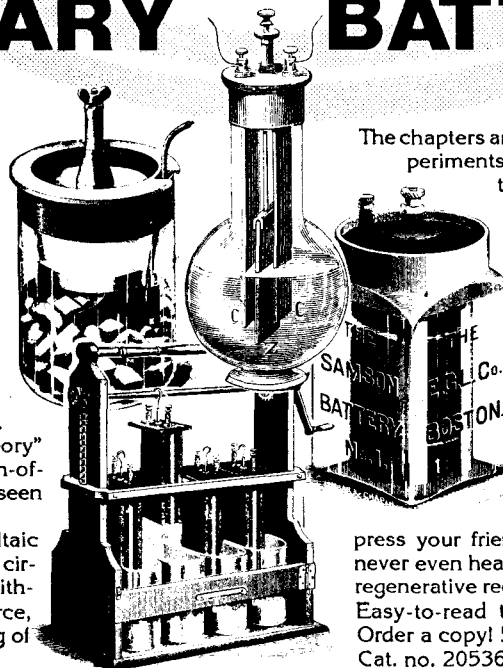
by Henry S. Carhart

reprinted by Lindsay Publications

Why not power your homemade radio with homemade batteries? You can find instructions on cell construction, but you really won't learn how they work. Here's a great little book that covers the characteristics, construction, performance, maintenance, and measurements of primary batteries — batteries that turn chemicals into electricity.

This is not really how-to. You won't be given dimensions, parts lists, nor detailed formulae, although in many instances you may get enough information to build a successful cell. But what you DO get is what I call "practical theory" — knowledge that will help you understand turn-of-the-century batteries that few people have ever seen and get the most from them.

Chapters include introduction, simple voltaic cell, potential and electromotive force, closed circuit batteries, open circuit batteries, batteries without a depolarizer, standards of electromotive force, miscellaneous batteries, battery tests, grouping of cells, and thermal relations.



The chapters are actually broken into 118 sections such as experiments on the polarization of a simple cell, defects of the Daniell cell, the bichromate battery, the copper-oxide battery, the closed Leclanche cell, the Smee cell, the Law battery, the Gassner dry battery, Lord Rayleigh's form of the Clark element, Minchin's seleno-aluminum cell, Jablochhoff's battery, test of a silver chloride cell, grouping dissimilar cells, application of the Bunsen cell, and much more.

The information here is hard-to-find and essential for successfully using homemade batteries. This info together with how-to instructions will give a well-rounded understanding of primary batteries.

Excellent book. Great illustrations! Impress your friends with your knowledge of devices they've never even heard of! Take out a Minchin battery and power a regenerative receiver! They'll think you're Tesla reincarnated! Easy-to-read text. Understandable theory. Worth having. Order a copy! 5x7 paperback 208 pages
Cat. no. 20536

\$8.95

LeJay Manual

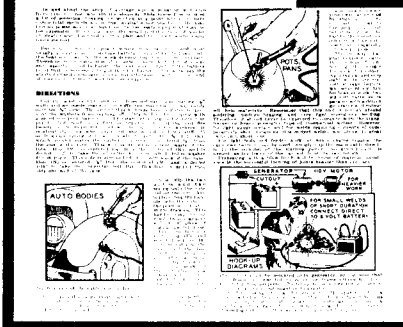
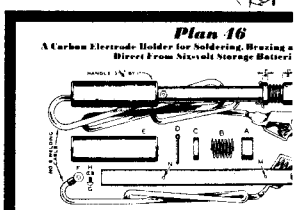
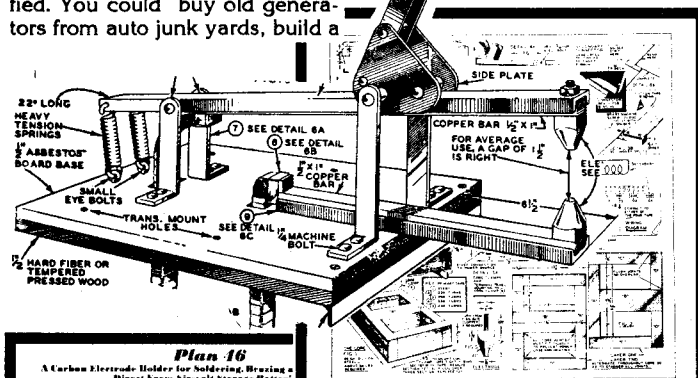
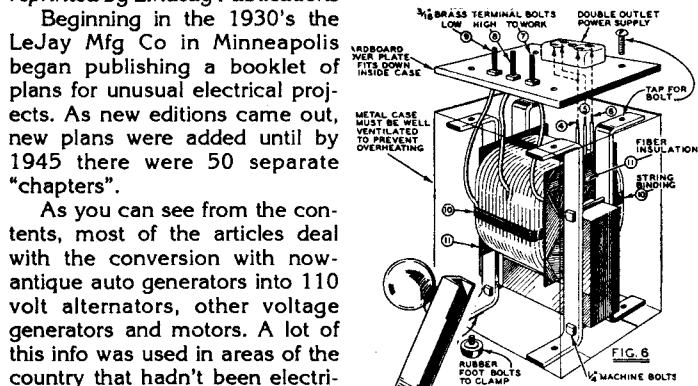
LeJay Manual - 1945 Edition

by Lawrence D. Leach

reprinted by Lindsay Publications

Beginning in the 1930's the LeJay Mfg Co in Minneapolis began publishing a booklet of plans for unusual electrical projects. As new editions came out, new plans were added until by 1945 there were 50 separate "chapters".

As you can see from the contents, most of the articles deal with the conversion with now-antique auto generators into 110 volt alternators, other voltage generators and motors. A lot of this info was used in areas of the country that hadn't been electrified. You could buy old generators from auto junk yards, build a



windmill, repair old auto batteries, use the electricity generated to power homebuilt motors, welders and so on.

Most of the information in this booklet is now of limited value simply because you can't get the generators listed. But rewinding data, hints and tips provided can help you in other rewinding projects for other types of generators.

There ARE several projects in this booklet any one of which is

worth the entire price of the publication. For instance, you can build a small but useful spot welder powered by nothing more than a string of auto batteries. You get plans for an arc welder, a transformer spot welder, a carbon-arc torch, electric bicycle, a water wheel, windmills and more. And they're all well illustrated.

This is a manual worth having in your reference library. You may not be able to use all of the information, but you'll get so many ideas even from those chapters you can't use, that you'll find this manual to be worth many times its retail price.

Great ideas. Fun to read. Useful projects. Worth having. Order a copy! 8 1/2 x 11 booklet 32 pages

Cat. no. 20013

\$5.95

Contents

- 1 Plans for 110 Volt AC Light Plant made from Ford Model "T" Generator
- 2 200 Watt AC Generator for Automobile Made from Ford Model "A" Powerhouse
- 3 A 6 Volt Slow Speed Generator (with plans for all-metal windmill)
- 4 6 Volt & 12 Volt Slow Speed Generators from Dodge "G" or "GA" Northeast Generator also from other Generators
- 5 A 32 volt slow speed wind light Plant Generator
- 6 One 32 Volt Motor, One 110 Volt Motor, One 32 Volt Generator, One 110 Volt Generator from Dodge Generator
- 7 How to Make a Grinder, Series Motor, Constant Speed Motor, A Universal AC or DC Motor and a Soldering Iron
- 8 A 75 to 110 Ampere Arc Welder Made from Dodge "G" or "GA" Generator. Also Dual Welders.
- 9 Pendulum Type Fence Controller made from Ford "T" Coil
- 10 Plans for Building a Complete Wind Light Plant Including Tower, Propeller and Generator Charger
- 11 A 110 Volt AC Light Plant Generator
- 12 A "B" Eliminator For Your Battery Operated Radio
- 13 An Automobile Generator Booster Control
- 14 A 6 Volt Slow Speed Generator from Standard 14 Slot 28 Bar Generator
- 15 A 32 Volt Constant Speed Generator made from Ford "T" Generator
- 16 A 2 Volt Slow Speed Generator from Standard 14 Slot 28 Bar Generator
- 17 How to Convert A 6 Volt Cut-Out for 2 Volt Operation
- 18 Directions for Repairing Your Own Batteries
- 19 A Water Wheel Made from Old Automobile Wheel
- 20 An Electric Outboard Motor from Old Ford "T" Generator
- 21 A Gas Engine or Motor Driven Generator with Drawings in Detail
- 22 An Armature Growler for Testing Auto or Slow Speed Armatures
- 23 Two 32 Volt Series Motors from Dodge "G" or "GA" Generator
- 24 A 32 Volt Heavy Duty Motor made from Dodge "G" or "GA" Generator
- 25 A Bench or Breast Drill for 6, 12, or 32 Volts from "T" Generator
- 26 A 6 Volt Motor for Drill Press, Washing Machines, etc. made from Model "T" Generator
- 27 One 12 volt Motor and One 32 volt Motor Made from Model "T" Generator
- 28 Two 6 Volt Generators from the Dodge, also general information
- 29 A 110 V. or 220 VAC Portable Transformer for Arc Welding
- 30 A 110 Volt Spot Welder — 1 Kw. Input Normal Draw 10 to 11 Amps
- 31 A Direct Drive 32 Volt Wind Plant — All Metal Construction
- 32 A Battery Spot Welder
- 33 Armature Diagrams for Autolite, Bosch-Autolite and Bosch Generators
- 34 Armature Diagrams for Delco, Delco-Remy, & Remy Generators
- 35 Armature Diagrams for Ford A, B and V8 Generators
- 36 Armature Diagrams for Northeast Generators
- 37, 38 Armature Diagrams for Atwater-Kent & Dyneto Generators
- 39 Armature Diagrams for Leece-Neville Generators
- 40 Armature Diagrams for Wagner Generators
- 41 Armature Diagrams for Westinghouse Generators
- 42 Plans for Installing Lights on Your Tractor
- 43 Two Types 110 Volt AC Insect Exterminators
- 44 An Electric Scooter Using a 6 or 12 volt Battery for Power
- 45 An Electric "Go Bike" Using a 6 or 12 volt Battery for Power
- 46 A Carbon Electrode Holder for Soldering, Brazing and Light Welding Direct from Six-volt Storage Batteries
- 47 Ball Type Fence Controller Made from Ford "T" Coil
- 48 110 Volt AC 500 Watt Self Excited Generator from Dodge Model "G" or "GA" generator
- 49 110 Volt AC 60 Cycle 1/2 HP Synchronous Motor from Dodge Model "G" or "GA" Generator
- 50 An AC Welding Transformer Using Dodge Generator Coils

Appendix Windpower Information, Definitions, etc.

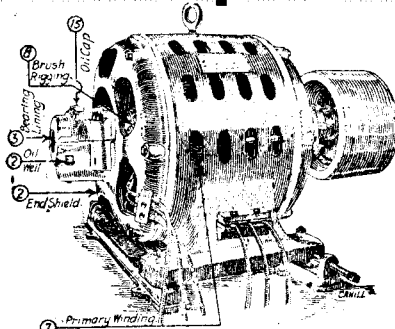
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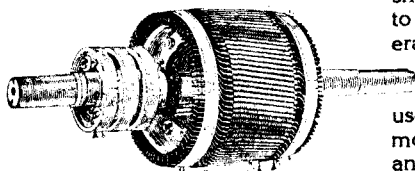


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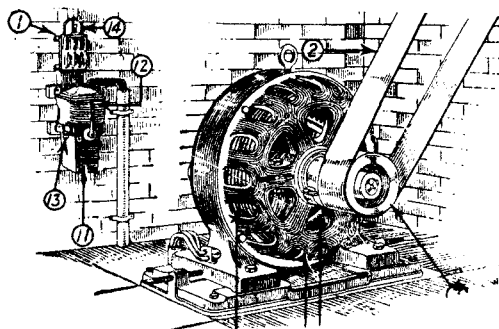


erators, diagnosis of troubles, methods to solve special troubles, tables and more.

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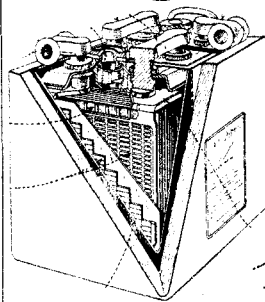


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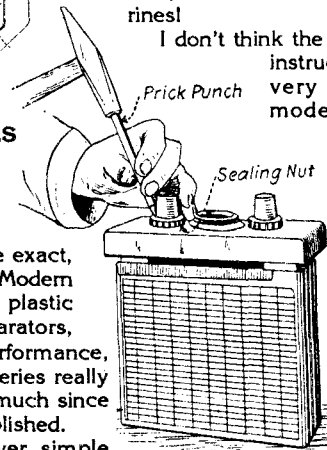
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Lindsay has given up the book business to become a **Pony Express Rider**

But don't worry! If UPS doesn't put him out of business, his sorry riding technique will.

What is really disgusting is that circus performers have been arriving here to learn his bizarre riding technique. They think he's a great rider.

Actually, he rides this way because he loves the feel of leather and the smell of a lathered horse. Yuk!

Lindsay also claims that his inverted riding posture helps keep his posterior cool. But! The EPA keeps threatening to fine us because the resulting smell

generated as he rides by is killing wild flowers along the roads!

When the visiting circus riders discover Lindsay is no performer at all, but just a very twisted individual, they leave

here just shaking their heads. No way are they going to duplicate his technique!

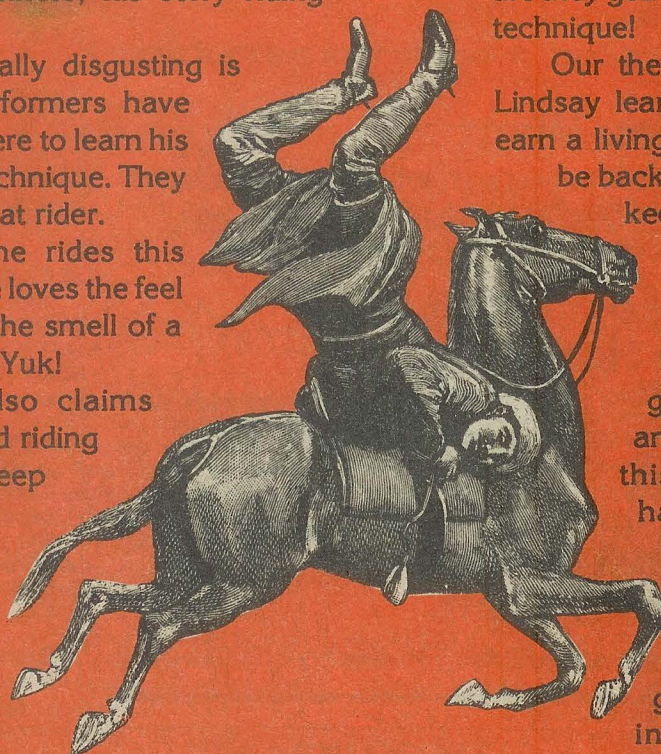
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